THE JOURNAL

OF THE

ANTHROPOLOGICAL INSTITUTE

OF

GREAT BRITAIN AND IRELAND.

JUNE 10TH, 1890.

PROFESSOR W. H. FLOWER, C.B., LL.D., F.R.S., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the INDIA OFFICE.—Epigraphia Indica and Record of the Archæological Survey of India. Edited by Jas. Burgess, LL.D., C.I.E.

From the AUTHOR.—The Orbito-Maxillary Frontal Suture in Man and the Apes, with Notes on the Varieties of the Human Lachrymal Bone. By Arthur Thomson, M.A., Oxon., M.B., Edin.

—— Additional Note on the Influence of Posture on the Form of the Articular Surfaces of the Tibia and Astragalus in the Different Races of Man and the Higher Apes. By Arthur Thomson, M.A., M.B.

—— Primitive Games. By Everard F. im Thurn, M.A.

—— Mining Laws and Customs in the Malay Peninsula. By Martin Lister.

—— Les Origines de la Cartographie de l'Europe Septentrionale. Par M. le Dr. E. T. Hamy.

From the AUTHOR.—Funde aus der Steinzeit Aegyptens. Von W. Reiss.
From the GOVERNMENT OF PERAK.—The Perak Government Gazette. Vol. iii. Nos. 10–14.
From the BUREAU OF ETHNOLOGY, WASHINGTON.—Textile Fabrics of Ancient Peru. By William H. Holmes.
—— Bibliography of the Iroquoian Languages. By James Constantine Pilling.
—— Bibliography of the Muskhogean Languages. By James Constantine Pilling.
—— The Circular, Square, and Octagonal Earthworks of Ohio. By Cyrus Thomas.
—— The Problem of the Ohio Mounds. By Cyrus Thomas.
—— Fifth Annual Report. 1883-84.
—— Sixth Annual Report. 1884-85.
From the DEVONSHIRE ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—Index to the twenty-first volume.
From the ROYAL SCOTTISH GEOGRAPHICAL SOCIETY.—The Scottish Geographical Magazine. Vol. vi. No. 6.
From the BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN.—Dagh-Register.
From the ACADEMY.—Transactions of the Wisconsin Academy of Sciences, Arts, and Letters. Vol. vii. 1883–87.
From the ASSOCIATION.—Journal of the East India Association. No. 2. 1890.
From the INSTITUTION.—Journal of the Royal United Service Institution. Vol. xxxiv. No. 152 and Index to Subjects. Vol. xxxiii.
From the SOCIETY.—Proceedings of the Royal Geographical Society. June, 1890.
—— Proceedings of the Society of Biblical Archæology. Vol. xii. Pt. 7.
—— The Journal of the Proceedings of the Royal Society of Antiquaries of Ireland. No. 1. Vol. i. Fifth Series.
—— Proceedings of the Asiatic Society of Bengal. Nos. 7–10.
—— Journal of the Asiatic Society of Bengal. Vol. lviii. Nos 291–5.
—— Journal of the Society of Arts. Nos. 1956–9.
From the PUBLISHERS.—Folk-Lore. Vol. i. No. 2.
From the EDITOR.—The American Antiquarian. Vol. xii. No. 3. May, 1890.
—— Nature. Nos. 1072–1075. 1890.
—— Science. Nos. 378–381. 1890.
—— L'Anthropologie. Tome i. Nos. 1–3.
—— Revue Scientifique. Nos. 20–23.

The Rev. E. F. WILSON, of Sault St. Marie, Ontario, exhibited a Pottawatamie boy, and described briefly certain North American Indians.

EXHIBITION *of a* FETISH, *or* ULA, *from* LAKE NYASSA.

By PROFESSOR W. H. FLOWER, C.B., LL.D., F.R.S.

PROFESSOR FLOWER exhibited, on behalf of the Rev. Leonard O. Warner, an instrument termed the *Ula*, from Likoma Island, Lake Nyassa. It is made of the skin of a small animal, stuffed with "medicine," and is used by witch-doctors for augury and for discovering the perpetrator of a crime. The doctor pulls it about, rubs it in his hands, talks "gibberish" to it, and then professes to receive from it an answer. The manipulation of the ula is expressed by the word *tembenuza*. The instrument is regarded with deep reverence, and it is extremely difficult to obtain an example. Mr. Warner believes that the one procured by him, and exhibited to the meeting, is the only one ever brought to England. The specimen has been presented by Mr. Warner to the Ethnological Department of the British Museum.

Professor Flower pointed out that the skin was that of an ichneumon, but belonged to a species not represented in the Natural History Museum. It is believed by Mr. Oldfield Thomas to be referable to *Herpestes sanguineus* of Rüppell.

The ANSAIREE *of* ASIA MINOR.

By THEODORE BENT, Esq., M.A.

MR. BENT gave a description of the Ansairee who live in and around Tarsus, and who practice amongst themselves a secret religion. He connected their worship with that of the Ali-Ullah-hi, of northern Persia, and brought several points to bear on the theory that the nomad tribes from the Mediterranean to the Caspian all practice this occult religion. All look upon a certain Barba Nasere as their founder, the God-head of Ali is the basis of the religion, and they admit a Trinity, the Ain, Min Sin, or Ali the Father, Mahomed the Son, and Salman El Farsi, the Holy Ghost, which, joined with the fact that they make use of wine in their secret feasts as a symbol of Ali, would point to a Christian origin for the sect. A full account of the Ansairee will appear in the "Cornhill Magazine" under the title of "A Secret Religion."

The Ansairee are divided into four sects, the Shemali, the Kalazians, and two others, the peculiar tenets of which Mr. Bent described. Their prayers are very beautiful and expressive, and there are many curious points analogous to freemasonry in connection with the initiation of a new member.

At Tarsus they are thrifty and well-to-do, owning most of the gardens which surround that town, and many of their customs are analogous to those practised by the Kizil Bashi, a tribe who live further north. Mr. Bent also found the same religious tenets in a modified form amongst the Afshar tribes, and considers the extent of those who belong to this denomination to be far wider than was hitherto supposed.

Mr. Bent based his account on three sources of information, firstly, a close examination of the Ali-Ullah-hi in Persia; secondly, a written account of a renegade named Suleiman; and thirdly, personal investigations this spring in Tarsus.

DISCUSSION.

Professor RUPERT JONES, alluding to Mr. Bent's remark on the choice of hill-tops for some religious observances as having probably an ancient origin, noted that the habit of passing under or sleeping beneath the "table of the entombment" in Greek Churches may be associated with the similar old Welsh practice as to the Altar-table in Churches, and with the very much older notion of the value of passing a night in a cromlech, cist-vaen, or sacred stone cell, for purification, initiation, or other religious purpose.

Mr. BEAUFORT asked whether, as Mr. Bent explained that the Ansairees kept the same festivals as the Christians, as for instance, Good Friday and the Epiphany, he could give any idea how they calculated the time for the occurrence of these festivals, as that would be interesting as showing connection with Christianity.

Mr. BENT, referring to a question concerning worship of Ali-Ullah-hi on mountain tops, replied that as the Ansairee of northern Persia lived amongst fire worshippers, they had probably taken this idea from their environments.

Mention had been made of the parallel custom of passing the night under cromlechs in Wales. The custom was referred to very ancient times when Greeks slept in Temples (ἐγκοίμησις) to effect cure.

A question having been asked as to the dates of Ansairee festivals, the speaker stated that the Christian ones were adopted both as to time and method from the neighbouring Christians and the Mohammedans in the same manner.

The following Paper was read by the Author:—

A CONTRIBUTION *to a* SCIENTIFIC PHRENOLOGY.

By BERNARD HOLLANDER, Esq., of Vienna.

IN a Paper on "Brain Centres of Ideation," read before the Anthropological Institute in February, 1889, I gave a collection of facts relating to the subject of brain functions in their subjective and objective aspects, with a view to show the possibility of a "scientific" phrenology, and the necessity of re-examining the empirical observations made by Dr. Gall, bearing in mind the defects of his system, and the over-strained pretensions of his followers. In the present communication I present the result of further investigations, showing again a striking similarity between modern experimental researches on the functions of the brain, and the observations of early phrenologists, whose work has been long ago rejected on account of the insufficiency of their method.

Centre for the concentration of attention and visual ideation.—The majority of brain-physiologists agree that the "visual" brain-centre is located in the first occipital convolution (See Exner, "Localisationen der Functionen in der Grosshirnrinde des Menschen," p. 60.) True, Professor Ferrier was for a long time under the impression that the "angular gyrus" is the centre of sight; but it is now shown that lesion of the angular gyrus does not affect the sight, whereas destruction of—say the left—gyrus occipitalis prim. causes blindness on the right eye. Professor Ferrier's work is nevertheless of great significance in this investigation, for he is a philosopher as well as a scientist, and has not only mapped out the brain in motor-areas, but has considered the brain-hemispheres psychologically. Thus he maintains that destruction of the visual brain-centre causes not only loss of vision but also loss of visual ideation and memory, "not only makes the individual blind presentatively, but blind re-presentatively or ideally" ("Functions of the Brain," p. 429).

He continues (p. 463, § 18): "Ideas excited peripherically, arising spontaneously, or recalled voluntarily, tend to flow along the lines of association by contiguity or similarity. The current may flow on uninterruptedly as in a reverie or a dream, or it may be suddenly checked or diverted by an impression from without, which vividly engages our attention. Attention so excited is purely passive, and the concentration of consciousness is proportional to the intensity of the stimulus. But just as we can at will fix our gaze on some one object out of many appealing to our sense of vision, and see this clearly while all

others are indistinct or invisible, so we can fix our intellectual gaze, or concentrate our consciousness, on some one idea or class of ideas to the exclusion of all others in the field of intellectual vision. This is a purely volitional act, and its exercise is accompanied by a distinct feeling of exertion, and ultimately fatigue, if continued.

"The physical expression of rapt attention is that of intent gaze, with the eyes accommodated for near or distant objects, and associated with such movements of the head as serve to bring the object on the punctum centrale of the retina." Thus indicating that intellectual attention is essentially ideal vision.

"Apart from the passive or reflex concentration of consciousness conditioned by the intensity of the spontaneously revived or actual sensation, *we cannot voluntarily concentrate attention on any idea which we cannot represent visually*, either in its own characters, source or relations."

According to this mode of reasoning "intellectual attention is mainly ideal vision," and the faculty of attention is intimately related to the centres of visual perception and ideation.

Whether Professor Ferrier be right or wrong, we must take note of the remarkable coincidence that George Combe should have located the same faculty in the same area, *i.e.*, first occipital convolution.

"Concentrativeness," the name given to the faculty in question by Combe, was supposed to be a power to arrest one's attention for a long time on one object. The individual is said to be absorbed. When we endeavour to concentrate our thoughts upon a subject, we endeavour to seize upon the object of thought and keep it steadily before the mind. An effective concentration of the faculties takes place only when the original leading conceptions are of themselves powerful and permanent, and the concentration will be found consequently to be most perfect when there is least effort to produce it.

As to the nature of the supposed faculty there can be no doubt that some minds possess the power of dwelling intently upon one thing, to the exclusion of others having no relation to it. Persons with a comparatively large development of the brain-area concerned, I suppose, would possess the physical condition to continuity of thought; they would fix the mind upon an object to be done, and not leave it till it is finished, while such persons as have this brain-area defective, would commence many things and finish few, would lack consistency, and fail to carry out ideas.

Whatever may be thought of the hypothesis, it will be granted that the coincidence of harmony between Professor Ferrier's

reasoning and the statements made by phrenologists must have some significance.

Centre for the revivification of ideas.—Mr. Herbert Spencer has written some able articles on Phrenology (Zoist, Vol. i and ii), in which he not only demonstrated his belief in Gall's system, but showed himself an acute observer. One of those articles entitled "A Theory concerning the Organ of Wonder," is of special interest to us.

Dr. Gall observed a connection between visions or hallucinations, and a particular brain-area, but he was not able to arrive at any definite conclusion as to the function of this part. His followers, however, as the result of their observations on living heads, maintained that a large development of this "un-named" area of Gall is accompanied by an active sentiment of wonder or marvellousness. Against this theory Mr. Herbert Spencer objected, and substituted a theory of his own, which, as I shall show, is very similar to that of Professor Ferrier regarding the function of the same area.

The origin of visions and hallucinations has always been a puzzle to both pathologists and students of mental science, and when Professor Ferrier's experiments on the brain-cortex became known, it was supposed that his "visual" and "auditory" centres would offer an explanation. The visual centre was originally located by Professor Ferrier in the "angular gyrus," but has since been referred by foreign investigators, and by Professor Schäfer in this country, to the occipital lobe, especially the first occipital convolution. However, at the time of the enquiry which I am about to quote, the visual centre was supposed to be in the angular gyrus.

Dr. W. J. Mickle ("Journal of Mental Science," Vol. xxvii and xxviii) examined 32 cases of general paralysis (in soldiers), in order to see whether pathology confirmed Ferrier's localizations, on the theory that visual hallucinations are the result of disturbed visual centres. If the theory be correct the diseased area must occupy the angular gyrus, or as is now believed, the first occipital convolution. Out of 15 cases of visual hallucination (17 were auditory) not a single case showed affection of the occipital lobe, and even with regard to the much closer angular gyrus—which is, as we know, no visual centre at all—Dr. Mickle has come to the conclusion that "in cases of visual hallucination in general paralysis, the angular gyrus is not affected in the marked manner one would anticipate, on the theory that it is the sole cortical visual centre." On the other hand, I find that the cases Dr. Mickle mentions only confirm the view that hallucinations are concerned with a morbid change in the structure of the most posterior zone of the frontal lobe, and that

the hallucinations vary in character and are augmented in relation to the spread to the surrounding convolutions.

Let us now see what Mr. Herbert Spencer has to say as to the origin of visions. In the paper quoted, he supposes the area, which Gall noted to be connected, with a liability to visions, to be the centre for the *revivification of ideas*, the organ of "Reviviscence" as he calls it, and supposes this faculty to be the chief agent of imagination. His own words are :—

"The reader will at once see that the liability to be deceived by spectral appearances, must, other things being the same, vary as the power of the proposed faculty. The more efficient the instrument for the revivification of impressions, the more nearly will the images produced approach in appearances the realities. Celebrated painters have possessed the power of calling up objects so distinctly before the mind's eye as to render the process of depicting them little more than copying from Nature. If then the faculty be capable of effecting so much under the influence of its ordinary stimulus, we may reasonably assume that its unnatural actions will be accompanied by a difficulty in distinguishing revived impressions from real perceptions. Numerous cases of mental illusions from a slightly disordered state of the brain might be quoted. Similarly may be explained the mental action which gives rise to the seeing of ghosts and apparitions. During the gloom of night, and under the influence of appropriate feeling, every dimly distinguished object calls up in the mind some pre-existing impression to which it may chance to bear a faint resemblance, and amid the excitement resulting from extreme fear, the mental image is rendered so vivid as to be mistaken for the thing seen. Persons will of course be subject to such illusions in the ratio of their endowment of the faculty of Reviviscence."

He goes on :—"Reviviscence creates mental imagery, love of ghost stories, witchcraft, affording scope for imagination. It has been maintained that Reviviscence is the parent of imagination—that imagination is but a revival and putting together of impressions previously received by the perceptive faculties, and that upon the efficiency of the reviving agent must mainly depend the vividness of ideal images. Poets, therefore, who are in a great measure distinguished by their powers of imagination, may be naturally expected to possess a large endowment of Reviviscence. That such is the fact may be seen by reference to the heads of Milton, Shakespeare, Spenser, Dryden, Beaumont and Fletcher (dramatists), Drummond, G. Buchanan, Otway, Malherbe, Tasso, Young, Bunyan (Bunyan was a true poet, philosophically speaking, though not conventionally recognised as such), Cowper, Darwin, Scott, Byron, Wordsworth, and

Hogg. In all of them the organ is large, in some very large. The names of other poets might doubtless have been added to the list had likenesses of them been attainable."

He continues :—"Further evidence is deducible from the fact that so many men of powerful memory, or brilliant imagination, have been subject to mental illusions. Tasso held conversation with a spirit gliding on a sunbeam. Malebranche heard the voice of God distinctly within him. Pascal often started from his chair at the appearance of a fiery gulf opening by his side. Luther conversed with demons. Descartes was followed by an invisible person calling upon him to pursue the search of truth. Swedenborg describes heaven and hell. Benvenuto Cellini was accustomed to behold a resplendent light hovering over his own shadow. Dante talked with spirits, and Cowper was haunted with spiritual sounds. Inasmuch as these cases favour the conclusion, that the power of reviving impressions, either as manifested in memory or imagination, frequently co-exists with the liability to spectral illusions, they give collateral support to the proposed theory, for they show that these several traits emanate from the same peculiarity of organisation."

Mr. Herbert Spencer's theory, then, amounts to this—given in his own words :—"That the organ entitled 'Wonder' by the phrenologists has for its ultimate function the revival of all intellectual impressions, that it is the chief agent of imagination, and that it affords a tangible explanation of mental illusions, either when due to disordered states of the brain, or to unusual excitement."

The situation of "Wonder," or, to use Mr. Herbert Spencer's term "Reviviscence," corresponds with Ferrier's area (12), "the excitation of which causes the eyes to open widely, the pupils to dilate, with movements of the eyeballs and head. *It gives the appearance of attention, and the movements indicated are essential to the revivification of ideas.*"

Professor Ferrier gives the following explanation :—"Just as the initiation, or partial excitation, of any particular movement reacts back upon the sensory cohesions with which it is associated, so the *movements of the head and eyes* react back on the centres of vision and keep the ideal object in the field of clear consciousness, and through this *recall its various sensory and motor associations. It is not essential that the object revived in idea should be so clearly revived in the visual field as the actual object itself.* There are great differences in this respect among different individuals,[1] and there is no relation between the vivid-

[1] See the valuable and interesting observations on this head by Mr. Francis Galton : "Inquiries into Human Faculty and its Development, 1883 ; Mental Imagery," p. 83, *et seq.*

ness of the mental imagery and the faculty of attention and abstract thought."

The expression produced by Professor Ferrier by means of the galvanic current is the expression we are accustomed to see in visionaries and superstitious people. Vimont says:—"When the emotion of wonder is much excited, the head is carried high, and turned to the side, the eyes are directed toward heaven, widely open, the eyebrows are elevated and the mouth is open. This expression is frequently seen in visionary and superstitious people. When we are impressed by an event, the hands are stretched out, the look is fixed, the eyes are open, and the eyebrows are turned upwards."

Darwin speaks to the same effect, and adds as an explanation:- "As surprise is excited by something unexpected or unknown, we naturally desire when startled, to perceive the cause as quickly as possible, and consequently open our eyes fully, so that the field of vision may be increased, and the eyeballs moved easily in any direction." Darwin gives also numerous examples of the stretching of the arms, accompanying sometimes the expression of amazement; an effect which Professor Ferrier occasionally produced. The eyes open widely, the pupils dilate, head and eyes turn, and "occasionally this action is apt to be associated with that described under (5), *i.e.*, extension forwards of the opposite arm."

The seat of the irascible emotion.—Professor Ferrier was at one time disposed to believe the temporo-sphenoidal lobe to be the auditory centre, but it appears to me that he failed to interpret accurately the results of his experiments on this lobe. The principal effect of excitation of this area is "retraction of the ear," but this does not warrant us to conclude that we have discovered the auditory centre, just as we could not conclude that, because excitation of the centre just described (12)—or Reviviscence—causes opening of the eyes, it is the centre of sight. That destruction of the temporal lobe causes loss of hearing is contradicted by foreign experimental physiologists, and disproved by Professor Schäfer in this country. ("Proc. Roy. Soc.," Dec. 22, 1887.)

The apparent harmony of the effects produced in Professor Ferrier's experiments on this lobe with the phrenological localisation of the irascible emotion, must of course be received with caution. But as my object in the first instance is to direct future investigators as to the "probable" functions of the several parts of the brain, my researches on this particular point may not be unwelcome.

The effect of the galvanic current on the 3rd and 4th external convolution of jackals is described by Professor Ferrier as:

"Sudden retraction or pricking of the ear, causing the animal occasionally to make a sudden spring or bound forward." This is centre (14). In cats the excitation of the extremity of the corresponding convolutions—centre (9)—caused opening of the mouth, associated with vocalisation and other signs of emotional expression, such as spitting and lashing the tail as if in rage.

On p. 111 ("Expression of the Emotions"), Darwin refers the retraction of the ears to the care which animals take to prevent their ears being seized by their antagonists, and says: "Consequently through habit and association, whenever they feel slightly savage, or pretend in their play to be savage, their ears are drawn back. That this is the true explanation may be inferred from the relation which exists in very many animals between their manner of fighting and the retraction of their ears. All the Carnivora fight with their canine teeth, and all, as far as I have observed, draw their ears back when feeling savage." Darwin quotes numerous examples showing that animals when savage have their mouths open and the ears drawn backwards, especially the latter.

Gall located in the same region his "propensity to kill," which he afterwards modified to the "carnivorous instinct"; his followers chose the term "destructiveness," and "the locality of it was suggested by comparing the brains and skulls of carnivorous animals with herbivorous, and those of murderers with average human beings." Whatever may be said against his deduction, the facts which he observed nearly a century ago agree with Professor Meynert's (Vienna) observations—a comparison between the brains of carnivorous and herbivorous animals—and with those of Professor Benedict (Vienna)—a comparison between the brains of murderers and carnivorous animals.

Professor Bain says: "Mr. Robert Cox, in an elaborate examination of 'Destructiveness' ("Phren. Journal," Edinburgh, Vol. ix, p. 402), regards the primitive feeling as the 'propensity to injure,' sometimes with malice, at other times not. We have here, in fact, merely another name for the 'irascible,' emotion, although Combe asserts that metaphysical authors do not treat of any power resembling the destructive propensity. As an example from history, Nero might be cited, whose pleasure of malignity was amply gratified."

Herbert Spencer describes ("Principles of Psychology") the destructive passion as a general tension of the muscular system, gnashing of the teeth, protrusion of the claws, in dilated eyes and nostrils, in growls, and says these are the weaker forms of the actions that accompany the killing of prey.

Conclusion.—In a former communication ("Journ. Anthrop.

Inst.," August, 1889), I have shown the connection existing between—

(1.) The modern centre for movements of the elevator muscles, and the phrenological organ of "Hope," or "Cheerfulness."

(2.) The modern centre for movements of the facial muscles, and the phrenological organ of "Imitation," or "Mimicry."

(3.) The modern "gustatory centre," and the phrenological organ of "Gustation," or "Alimentiveness."

(4.) The modern centre of the so-called "patience muscles" (raising the shoulder), and the phrenological organ of "Veneration," or "Submission."

(5.) The effects of excitation and destruction of the "angular gyrus," and the phrenological organ of "Cautiousness."

Having now added three more points for your consideration, perhaps you will grant me thus much—

That the founders of what we are accustomed to consider as the antiquated system of phrenology, though unable, in the state of knowledge at that time, to demonstrate their conclusions, must have been extremely shrewd and careful observers of all the facts which lay within their reach, and that the theories which they based upon these observations are well worth a careful re-examination in the light of modern science.

JUNE 24TH, 1890.

EDWARD W. BRABROOK, Esq., F.S.A., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of NORMAN H. HARDY, Esq., of No. 8, Bloomfield Road, Uxbridge Road, W., was announced.

The following presents were announced, and thanks voted to the respective donors:—

FOR THE LIBRARY.

From the SECRETARY OF STATE FOR THE COLONIES.—Despatch from His Honour the Administrator of British New Guinea, giving details of an expedition undertaken to explore the course of the Fly River and some of its affluents.

From the AUTHOR.—The Gentile System of the Navajo Indians. By Washington Matthews, M.D., LL.D.
—— Notes upon the Gentile Organization of the Apaches of Arizona. By John G. Bourke.
—— Classification Naturelle des Sciences. Position et Programme de L'Anthropologie. By M. le Dr. Manouvrier.
From the ACADEMY.—Bulletin International de l'Académie des Sciences de Cracovie. Mai, 1890.
From the SOCIETY.—Proceedings of the Royal Society. Vol. xlvii. No. 289.
—— Journal of the Ceylon Branch of the Royal Asiatic Society. Vol. x. No. 36. 1888.
—— Journal of the Society of Arts. Nos. 1960–61.
—— Bulletin de la Société Imperiale des Naturalistes de Moscou. No. 3. 1890, Mémoires. No. 6.
From the EDITOR.—Nature, Nos. 1076–1077.
—— Science. Nos. 382–384.
—— Revue Scientifique. Tom. xlv. Nos. 24, 25.
—— Bullettino di Paletnologia Italiana. Tomo vi. Nos. 3, 4.

Mr. J. E. Price, F.S.A., exhibited two skulls recently exhumed in the City of London, and described a skeleton found near West Thurrock, in Essex.

The following Paper was read by the Author:—

The STUDY *of* ETHNOLOGY *in* INDIA.

By H. H. RISLEY, Esq., B.A., Bengal Civil Service.

ABOUT four years ago, in an article published in the *Asiatic Quarterly Review*, I ventured to complain of "the comparatively scanty use that has been made of the great storehouse of ethnographical data which British rule in India has thrown open to European enquirers." The complaint is one that cannot be too often repeated. In most works on Indian ethnology, evidence of the most unequal value, derived from the most various sources, is treated as if it were of uniform character. Brahmanical legends are placed on the same footing as facts ascertained by the best modern researches; and one writer after another is content to repeat isolated statements lightly made by some of the earlier observers without seeking to examine the source from which they were originally derived, or to test their probability by the application of the comparative method. Thus it happens that some piece of popular hearsay picked up by Buchanan in the course of his admirable survey of parts of

Bengal, and set down by him for what it is worth, gets separated from its context, and transformed by repeated quotation into an incontestable fact, which forms in its turn the basis of half a dozen wide-reaching theories. A single instance will show what is meant. In the latest Continental works on general ethnography, one of the most interesting of the East Himalayan tribes is credited with monotheistic notions wholly incompatible with their existing stage of theological or mythopœic development, and resting solely on a linguistic mistake of the original observers, which transformed the *general name* of the mostly malevolent powers (I can hardly call them spirits) which the tribe diligently propitiate, into the *personal name* of an imaginary Supreme Being. The paper containing this mistake, which has served for the last fifty years as the *locus classicus* for the tribe in question, contains also other data which, if critically handled, ought to have led to the detection of the error.

For these and similar shortcomings the writers of ethnographic treatises are not alone to blame. Indian ethnographic literature has grave defects of its own, which can only be corrected by systematic original research. In the first place it is extremely unattractive in form, bristles with technical expressions, strange names and unexplained allusions, and assumes on the part of the reader an acquaintance with Oriental conditions and surroundings which can only be acquired by actual residence in the East. These, perhaps, are minor obstacles which scientific students might reasonably be expected to overcome. More serious blemishes are to be found in the fragmentary character of the literature itself, in the writers' disregard of the lines of investigation pursued by European ethnologists, and in the consequent want of system in their method of conducting their inquiries. It seriously detracts from the value of monographs on particular tribes when we find that the researches on which they are based were made more or less at random, and directed towards a variety of different points, while the inquirers themselves had no idea of the relative scientific value of the facts which they recorded.

We have not forgotten that nearly twenty years ago so high an authority as the late Sir Henry Maine[1] drew attention to the great value which the records of settlement and revenue operations in India possess for students of comparative jurisprudence. For ethnographic purposes, on the other hand, this literature can hardly be deemed so instructive. Its range is not wide enough, and the information which it conveys is too meagre. The

[1] "Village Communities," pp. 34 and 61, edition of 1872.

officer in charge of a settlement is very fully occupied with the practical objects of making an equitable assessment of the Government revenue, and of adjusting the relations of landlords to their tenants on a peaceful and permanent footing. With the customs of the people he is concerned only in so far as these throw light upon their status in relation to the land, and unless the connection between the two sets of facts is tolerably obvious, it is no business of his to travel outside the record for the gratification of scientific curiosity. The usages, moreover, by which science sets most store are generally those which lie rather below the surface of Oriental life, and do not force themselves on the notice of European or native officials. In illustration of this difficulty, we may point to the phenomena of totemism, the wide prevalence of which in Bengal was only imperfectly realised by Colonel Dalton, while it entirely escaped the notice of earlier observers. Facts of this order can only be elicited by inquiries embracing a far wider area than is covered by any particular series of land revenue operations, and conducted on a system devised so as to give full play to the comparative method of research. They cannot be picked up *ἐκ παρέργου* in the course of ordinary official business.

For these reasons the ethnographical data to be found in Indian official reports are, as a rule, neither full enough nor precise enough to appeal very strongly to European ethnologists. Such reports, moreover, are not readily accessible to students; their titles give a very slight clue to the nature of their contents; and any information regarding custom which they contain is generally buried under a mass of highly technical and uninteresting matter. Clearly it is not to be expected that writers on general ethnology should toil through this mountain of chaff in the hope of picking out the scattered grains of knowledge which it might contain. Even were the labour accomplished, it might fairly be doubted whether anyone lacking Indian experience would find himself much the wiser at the end. More probably he would be filled with the regret that he had wandered to no purpose in a wilderness of uncouth names. Indian official reports are addressed to a small circle of experts who have gradually and insensibly acquired the elementary knowledge of the people and the country which forms the key to the sealed volumes of this peculiar form of literature. This knowledge can only be acquired in India, and has, for the most part, never been reduced to writing at all. The result is that writers on ethnology, when compelled to treat of Indian subjects, are thrown back on mere literary accounts which give an ideal and misleading picture of caste and its social surroundings. They show us, not things as they are, but things as they ought to be,

in the view of a particular school or in the light of a particular tradition.

This defect is by no means peculiar to Indian literature. It appears in a less prominent form in the works of European ethnologists, and has probably given rise to the reproach of neglecting critical methods which is commonly laid upon them. We are not so unreasonable as to urge that all ethnographical evidence should be gathered at first hand, and that no one should write about the customs of people with whom he has no personal acquaintance. But in studying some modern books on these subjects, it is difficult to get rid of the impression that the writers were a long way removed from the subjects they were dealing with, and had never quite got into touch with their facts. *Surgit amari aliquid*—we feel that something is wrong, and we are tempted to think that the savage man has hardly had justice done him. It is not for us to lay down a course of preliminary training for distinguished ethnologists, and to demand that Mr. Herbert Spencer should get himself enrolled, like Mr. Frank Cushing, in the sacred societies of the Zunis, or that Sir John Lubbock should follow the example of Mr. Lewis Morgan in joining himself to the Iroquois. The prospect of such an ordeal would perhaps thin the ranks of the votaries of a new science. But in these matters a little knowledge at first hand is a very good thing, and some slight personal acquaintance with even a single tribe of savage men could hardly fail to be of infinite service to the philosopher who undertakes to trace the process by which civilization has been gradually evolved out of barbarism. Such experience would assuredly leave upon his mind a vivid impression of the extreme difficulty of entering into savage modes of thought, of the imperfection and untrustworthiness of testimony, and of the extraordinary fluidity and mutability of custom itself. It would also inspire him with a profound distrust of the statements made in books of travel.

We may indeed claim for ethnographic research in India a comparative immunity from some causes of error which have hampered the development of ethnology and retarded its recognition as a science. Most of the barbarous and semi-barbarous tribes which come under observation in India are at the present day fairly accessible, and the inquirer can as a rule get together as many specimens of them as he wants without undergoing excessive trouble or hardship himself. Observations can thus be multiplied and repeated, and sounder general conclusions arrived at than could be derived from the study of a few specimens of a declining race. At the same time the great improvement in communications, which has brought the wilder

tribes within reach of the scientific observer, has not exposed them to that contact with colonists of European blood which has proved so destructive to the aborigines of Australia and America. Those races of India, which, for want of a better name, we may for the present call non-Aryan, show no tendency to disappear, and in some parts of the continent their numbers appear to be on the increase. Without, therefore, omitting to record the characteristics of tribes which are dying out, like the Lepchas, or losing their identity, like the Mech and Dhimal, by absorption into larger groups, the ethnographer is by no means confined to the study of moribund types. Nor is he greatly troubled by the difficulties connected with language, which have proved so serious an obstacle to inquirers in other parts of the world. Interpreters are readily available, and a fair knowledge of the common Indian vernaculars will be found sufficient for the elucidation of the customs of all but the wildest tribes.

In these ways India offers special facilities for the systematic collection of ethnographical data on a large scale, and for testing these data by repetition and comparison to any extent that is considered desirable. But this is not all. Not only do the administrative conditions of the country lend themselves readily to the collection of evidence, but the social system is so constituted as to render that evidence peculiarly valuable and telling. In Europe, and in most parts of the world, where anthropological enquiries have been pursued, the prevalence of *métissage*, or the crossing of races, constantly tends to complicate the investigations and to obscure and confuse the results. There is nothing to prevent the union "of the blond Kymri with the dark-haired dweller on the Mediterranean, of the brachy-cephalic Celt with the dolicho-cephalic Scandinavian, of the tiny Laplander with the tall Swede."[1] In fact, all the recognised nations of Europe are the result of a process of unrestricted crossing which has fused a number of distinct tribal types into a more or less definable national type. In India, whatever may have been the case centuries ago, nothing of this sort is now possible. The institution of caste breaks up the population of the continent into a countless number of mutually exclusive aggregates of homogeneous composition, and forbids a member of one group to marry within any group but his own. The result of this application to marriage of the primitive principle of *Taboo* is to make differentiation rather than integration the dominant tendency in society; and while the existing groups maintain their exclusiveness, any deviation from the prescribed standard of social or ceremonial propriety is apt to become the occasion for the form-

[1] Topinard, "Eléments d'Anthropologie Générale," Paris, 1885, p. 203.

ation of a new aggregate. Illustrations drawn from other societies are not easy to devise, as nothing exactly resembling caste appears to have been developed anywhere but in India. The instances commonly cited as parallel fall far short of exact resemblance. The Egyptian occupational divisions were not endogamous: the mediæval restrictions on intermarriage between members of different ranks in society were, as the story of Philippine Welzer shows, not absolute. But leaving history on one side, let us suppose that the numerous German tribes mentioned by Tacitus had been organized on the principle of caste, and had adhered to it all along, and endeavour to see what some of the consequences would be at the present day. In the first place, the tribal names and grouping would have been stereotyped and perpetuated, and each tribe would be endogamous—that is to say, a man of the Chatti would only be able to marry a woman of his own tribe, and could on no terms marry a Cheruscan or a Semnonian woman. Liaisons with members of other groups would of course occur, for no system can wholly eliminate natural instincts; but if the working principle of caste were consistently maintained, their offspring would be relegated to a separate subdivision, which would probably bear a name more or less suggestive of mixed descent. So far it will be said the bond is one of race, and the prohibition on intermarriage merely seeks to maintain the purity of the original stock; for primitive people cannot be expected to appreciate the virtues of crossing, and regard all strangers as natural enemies. But the principle of caste once set working does not stop here, but catches at any pretext to subdivide the original stock. If a few families of Chatti left the tribal settlements between the Rhine and the Weser, and found for themselves new homes in Bavaria or Bohemia, the change of domicile would probably debar them from the privilege of taking wives from the parent tribe, and would compel them to form a fresh matrimonial group for themselves. Again, if the original occupation of a tribe were hunting, and some took to agriculture; or if the original occupation were agriculture, and some became weavers or potters, the difference of profession (being held by a sort of unconscious fiction to be equivalent to the difference of race, which is the true basis of the system), would lead to the marking out of a new matrimonial aggregate. Last of all, religion may step in to create a further set of complications by ordaining that members of particular sects may or may not intermarry, or by giving rise to fresh groups which set up matrimonial arrangements of their own. This cause, however, has not operated in India on so large a scale as might perhaps have been expected. Differences of religious practice within the limits of Hinduism do not necessarily affect

the *jus connubii*, and some castes, among whom we may instance the Agarwáls and Oswáls, allow intermarriage between Hindus and Jains.

A society thus organized, whatever may be its social and political peculiarities, clearly offers in some respects a peculiarly favourable field for anthropological research, especially for that branch of the science which is known as anthropometry. An institution like caste, which seeks to eliminate crossing, and works with tolerable success towards that end, may be expected to preserve with the minimum of alteration whatever distinct types were in existence when restrictions on marriage first began to take effect; and methods of observation which profess to ascertain and record types of physical development may for this reason be supposed likely to yield peculiarly clear and instructive results. When, moreover, those methods themselves are still in some respects in the experimental stage, and are admitted to stand in need of testing by application to large numbers of subjects, the argument for selecting an area where the chief source of confusion is virtually eliminated, gains considerable strength. Professor Topinard, in his work on the Elements of Anthropology,[1] lays stress on the difficulties which he experienced in Algeria in his attempt to obtain representative specimens of the two fundamental types—the Arab and the Berber. He describes how the crossing between Berbers, Arabs, blonds of the epoch of the Dolmens, Negroes, and Jews, had at the time of his visit to the country obscured the original types to such a degree that he found it difficult to reconstruct them. Had M. Topinard conducted similar experiments in Bengal, he would have had no reason to complain of the indistinctness of the types presented to him, or of the difficulty of obtaining subjects; and it is for these reasons that India may be commended to the notice of those European ethnologists who prefer to collect their facts at first hand, and do not rely solely upon information gathered from books.

An attempt has recently been made to approach the study of Indian ethnology through the methods which have been employed by European observers in other parts of the world. In August, 1882, while the statistics of the census of 1881 were still under compilation, the Census Commissioner for India suggested that lists should be drawn up for each district showing separately the castes and occupations found there, and that inquiries should be instituted locally regarding any special caste and occupation about which further information might seem desirable. The Census Commissioner's proposals were generally approved by

[1] "Eléments d'Anthropologie Générale," p. 205.

the Government of India, and commended by them to the various provincial Governments with whom the initiative in such matters necessarily rests; but in no province except Bengal was it found possible to set on foot any large scheme of original research. Early in 1884 the Government of Bengal took the matter up, and in February, 1885, I was appointed for a period of two years, afterwards extended to three, to conduct an inquiry into castes and occupations throughout Bengal. No specific instructions were given to me, and it was understood that I was at liberty to adopt any line of investigation that I thought likely to yield interesting results. After making some experimental enquiries in Behar and North-Eastern Bengal and preparing a provisional scheme, I visited Lahore for the purpose of conferring with Mr. Denzil Ibbetson, of the Bengal Civil Service, and Mr. John Nesfield, Inspector of Schools in Oudh, from whom I obtained most valuable advice and assistance. One chief object of our deliberations was to secure, so far as might be possible, that ethnographical researches carried on in different provinces of the Bengal Presidency should proceed on the same general lines, in order that their results might be of some service to students of comparative ethnology in Europe. We considered the question of the best means to be adopted to collect original data in addition to the facts already on record in books, official reports, and publications of learned societies. For this purpose two sets of questions were drawn up—a general and a special series. The general series was framed with the object of bringing out, by as few and as simple questions as possible, the leading characteristics of any particular caste. The special series went into more detail, and attempted to cover the main heads of ethnographical inquiry in India. Our endeavour throughout was not so much to strike out new lines of research, as to adapt the methods already sanctioned by the approval of European men of science to the special conditions which have to be taken account of in India. Considerable use was made of the series of questions or heads of inquiry prepared by a Committee of the Anthropological Institute of Great Britain and Ireland in 1874, and to this doubtless is owing the fact that when the proceedings of the Conference were submitted by me for criticism to a number of scientific experts and learned societies in Europe, I received comparatively few complaints that subjects had been omitted or inadequately dealt with.

The scheme of inquiry sketched by the Conference covered a far wider range than can have been contemplated by the Census Commissioner or the Government of India. But this extension was found to be unavoidable directly the attempt was made to give effect to the general idea thrown out by Mr. Plowden. In

dealing with the intricate fabric of social usage it is difficult to define the component parts of the main subject closely enough to distinguish minutely the point where administrative utility fades away into scientific interest. Most of all in the East, where religion, law, custom, and morality, are all inextricably mixed and jumbled up together, would the attempt to attain any such precision be futile and misleading. It was understood, therefore, from the first, that the objects to be aimed at in the inquiry were partly scientific and partly administrative, and the Government of Bengal determined to publish and circulate the questions framed by the members of the Lahore Conference, and to enlist the aid of the district officers and others who were in a position to help in obtaining answers to them. Experience has shown that a single person can do very little towards collecting the requisite information within a given time. To elicit facts by oral inquiry is necessarily a lengthy process, and accuracy can only be secured by testing the statements of individuals or groups of individuals by numerous independent observations. On the other hand, it was essential that no more labour than was absolutely necessary should be thrown upon the regular administrative staff, and particularly upon the district officers, who always have their hands full of urgent executive work. Their influence, however, was from the first brought to bear, and through their agency, supplemented by a good deal of personal inquiry and correspondence, were secured the services of nearly 200 official and non-official correspondents scattered over every district of Bengal, and communicating in their turn with an indefinite number of representatives of the tribes and castes which formed the subjects of investigation.

In organizing the inquiry the object kept in view throughout was to multiply independent observations and to give as much play as possible to the working of the comparative method. The local correspondents were instructed to extend their inquiries over a wide field, to mistrust accounts published in books, to deal with the people direct, and to go for their information to the persons most likely to be well informed on questions of custom, such as priests, marriage brokers, genealogists, and headmen of castes, tribes and smaller groups. Correspondents were invited to clear up discrepancies thus brought to notice, and frequently an entire report was sent back, with marginal annotations, for further inquiry upon points which appeared to be doubtful. As the inquiry proceeded, several special subjects were taken up and examined in circular letters addressed to all correspondents with the object of summarizing the general results ascertained up to a certain stage, and

thus indicating lines of inquiry which might lead to fuller results. Among the subjects thus dealt with may be mentioned the working of the rule of exogamy, which proved to be considerably more intricate than had at first been supposed; the order of social precedence and the considerations by which it is determined; the status of different castes in relation to the land and to the curious tenures held on terms of police service in certain districts, and their comparative aptitude for emigration to the tea districts of Assam and the various Colonies which employ coolie labour.

During several years of district work in Chota Nagpore, a region peculiarly rich in survivals of archaic usage, and again, while organizing the Ethnographic Survey, some special opportunities have come in my way of observing the progress of the great religious and social movement described by Sir Alfred Lyall as "the gradual Brahmanising of the aboriginal, non-Aryan, or casteless tribes."[1] That this movement is progressing on a large scale is beyond doubt; but it by no means maintains a uniform character throughout its sphere of action, and it includes in Bengal at least four distinct processes, which may be analysed as follows:—

1. The leading men of an aboriginal tribe, having somehow got on in the world and become independent landed proprietors, manage to enrol themselves in one of the leading castes. They usually set up as Rajputs; their first step being to start a Brahman priest, who invents for them a mythical ancestor, supplies them with a family miracle connected with the locality where their tribe are settled, and discovers that they belong to some hitherto unheard-of clan of the great Rajput community. In the earlier stages of their advancement they generally find great difficulty in getting their daughters married, as they will not marry within their own tribe, and Rajputs of their adopted caste will of course not intermarry with them. But after a generation or two their persistency obtains its reward, and they intermarry, if not with pure Rajputs, at least with a superior order of manufactured Rajputs, whose promotion into the Brahmanical system dates far enough back for the steps by which it was gained to have been forgotten. Thus a real change of blood may take place; while in any case the tribal name is completely lost, and with it all possibility of accurately separating this class of people from the Hindus of purer blood, and of assigning them to any particular non-Aryan tribe. They have been absorbed in the fullest sense of the word, and henceforth pose, and are locally accepted, as high-caste Hindus. All

[1] "Asiatic Studies," p. 102.

stages of the process, family miracle and all, can be illustrated by actual instances taken from the leading families in Chota Nagpore; but such details would be irrelevant to my present purpose.

2. A number of aborigines embrace the tenets of a Hindu religious sect, losing thereby their tribal name and becoming Vaishnabs, Ramayats, and the like. Whether there is any mixture of blood or not will depend upon local circumstances and the rules of the sect regarding intermarriage. Anyhow the identity of the converts as aborigines is usually, though not invariably, lost, and this also may therefore be regarded as a case of true absorption.

3. A whole tribe of aborigines, or a large section of a tribe, enrol themselves in the ranks of Hinduism under the style of a new caste, which, though claiming an origin of remote antiquity, is readily distinguishable by its name from any of the standard and recognized castes. Thus the great majority of the Kochh inhabitants of Rungpore now invariably describe themselves as Rajbansis or Bhanga-Kshatriyas, a designation which enables them to represent themselves as an outlying branch of the Kshatriyas who fled to North-Eastern Bengal in order to escape from the wrath of Parasu-Ráma. They claim descent from Raja Dazarath, father of Rama; they keep Brahmans, imitate the Brahmanical ritual in their marriage ceremony, and have begun to adopt the Brahmanical system of *gotras* or exogamous groups. In respect of this last point they are now in a curious state of transition, as they have all hit upon the same *gotra* (Kasyapa), and thus habitually trangress the primary rule of the Brahmanical system, which absolutely prohibits marriage within the *gotra*. But for this defect in their connubial arrangements—a defect which will probably be corrected in a generation or two, as they and their *purohits* rise in intelligence—there would be nothing in their customs to distinguish them from Aryan Hindus, although there has been no mixture of blood, and they remain thoroughly Kochh under the name of Rajbansi.

4. A whole tribe of aborigines, or a section of a tribe, become gradually converted to Hinduism without, like the Rájbansis, abandoning their tribal designation. This is what is happening among the Bhumij of Western Bengal (Manbhum, Singbhum, Midnapore, and Bankura). Here a pure Kolarian race have lost their original language (Mundári), and now speak only Bengali: they worship Hindu gods in addition to their own (the tendency being to relegate the tribal gods to the women), and the more advanced among them employ Brahmans as family priests. They still retain a set of totemistic exogamous subdivisions closely resembling those of the Mundas and the Sonthals, but they

are beginning to forget the totems which the names of the subdivisions denote, and the names themselves will probably soon be abandoned in favour of more aristocratic designations. The tribe will then have become a caste, and will go on stripping itself of all customs likely to betray its true descent. The physical characteristics of its members will alone survive. After their transformation into a caste, the Bhumij will be more strictly endogamous than they were as a tribe, and even less likely to modify their physical type by intermarriage with other races.

There is every reason to suppose that the movement of which certain phases are roughly sketched above, has been going on for many centuries, and that, although at the present day its working can probably be most readily observed in Chota Nagpore, the Orissa hills, and parts of Eastern and Northern Bengal, it must formerly have operated on a similar scale in Bengal Proper and Behar. The well-known tenth chapter of Manu, which endeavours to account for the existence of the non-Aryan castes by representing them as the offspring of marriages between the four original castes, gives clear indications that in Manu's time, fixed by Burnell at 500 A.D., some of the non-Aryan races had already begun to intrude upon the Brahmanical caste system, while others were still in the tribal stage. Arguing from facts now observable, it seems likely that some of the castes alleged by Manu to be the result of more or less complicated crosses between members of the four original castes or their descendants, are really tribes which had lost their identity like the Rajbansis; for at the present day, if we look merely to customs, ceremonies, and the like, we find in the majority of cases that the admission of a tribe into the charmed circle of Hinduism results after a generation or two in the practical disappearance of the tribe as such. Its identity can no longer be traced by direct inquiry from its members, or inferred from observation of their usages. The Rajbansi and the Bhumij are instances of tribes in an early stage of transition, whose antecedents can be accurately determined. Later on not only do distinctive customs fall into disuse, but the tribe itself, after its promotion to the rank of a caste, breaks up into a number of endogamous groups, each of which practically forms a separate caste. But even in this extreme case the physical characteristics which distinguished the tribe tend on the whole to be preserved: and it is this persistence of the type which accounts for the differences of feature, which, though only definable by scientific methods, are marked enough to render it possible within certain limits to make a fair guess at a man's caste from his personal appearance.

These general impressions regarding the differences of physical

type observable within the range of the recognized caste organisation, coupled with the difficulty of throwing much light upon the true origin of the lower and intermediate castes by collating customs and ceremonies which they have borrowed in the most liberal fashion from the higher castes, suggested to me the possibility of applying to the leading tribes and castes of Bengal the methods of recording and comparing typical physical characteristics which have yielded valuable results in other parts of the world. Those methods might, it seemed, enable us to detach considerable masses of non-Aryans from the general body of Hindus, and to refer them, if not to the individual tribes to which they originally belonged, at least to the general category of non-Aryans, and perhaps to such specific stocks as Kolarian, Dravidian, Lohitic, Thibetan, and the like. If, for example, in Europe, where the crossing of races constantly obscures their true affinities, the examination of statistics drawn from physical measurements has been found to throw light upon the distribution of different race stocks in the population, a similar analysis of the leading tribes and castes in Bengal, where crossing operates only on a comparatively small scale, would *primâ facie* appear likely to enable us to determine the divergence of each of these aggregates from known Aryan or non-Aryan types. Such an analysis would, it was thought, be regarded with approval by the leaders of the Hindu community in all parts of Bengal, among whom both the orthodox and the advanced lay considerable stress upon the purity of their Aryan descent: it would appeal in some measure to scientific men in Europe, and the results would command whatever political value may attach to the demonstration that a given population either is or is not composed of homogeneous ethnic elements.

Starting with this general idea, I wrote to Professor Flower explaining the nature of the inquiry on which I was engaged, and the particular difficulty which I desired to overcome, and asked for his advice as to the character and number of the measurements to be taken, the apparatus which should be used, and the forms in which the results should be recorded. In a long letter discussing the subject very thoroughly, Professor Flower was good enough to give me most valuable general advice as to the most profitable line of inquiry to adopt, while for fuller instructions concerning the mode of operations to be followed in detail he referred me to the exhaustive work, "Les Eléments d'Anthropologie Générale," by Dr. Paul Topinard, Professor of the School of Anthropology, and Secretary to the Anthropological Society of Paris. Having satisfied myself that Professor Topinard's instructions for dealing with living subjects, and the instruments prescribed by him were applicable

to Indian conditions, I proceeded after making some experimental measurements in Rangpur, to frame a complete scheme for giving effect to his system. This scheme was submitted to Professors Flowers and Topinard for criticism, and after having received their approval, was sanctioned by the Government of Bengal, the services of Civil Hospital Assistant Babu Kumud Behari Samanta, then attached to the Tibet Mission, being placed at my disposal for the purpose of taking measurements. After some experience had been gained in the working of the system in Bengal, proposals were drawn up for extending it to other parts of India. In the North-West Provinces and Oudh, Sir Alfred Lyall sanctioned a special grant of Rs. 1,000 for instruments, measuring agency, &c., and a fine series of measurements were taken by Chandi Singh, an ex-pupil of the Barampur Medical School, under the supervision of Mr. J. C. Nesfield, Inspector of Schools for Oudh, himself a high authority upon the castes of that part of India. A small, but very interesting set of measurements was also taken in the Panjab by Civil Hospital-Assistant Aláuddin, under the supervision of Deputy Surgeon-General Stephen. In every case the measurers were taught the use of the instruments by me, and were supplied with printed instructions, defining the procedure with extreme minuteness of detail, and discussing at length a variety of difficulties which experience had suggested to me.

It will be seen that out of the proposal merely indicated by the Census Commissioner in 1882, two distinct lines of research have been developed, namely: (1), an ethnographic inquiry into the customs of all tribes and castes in Bengal, which either form a substantial proportion of the population of any district, or though numerically insignificant, are specially interesting from the scientific point of view; and (2) an anthropometric inquiry according to Professor Topinard's system, into certain of the physical characteristics of selected tribes and castes in Bengal, the North-West Provinces, Oudh, and the Panjab. The materials collected under these heads, although falling lamentably short of what a scientific standard of completeness would demand, have nevertheless reached a stage at which it becomes clear that it would be unwise to defer publication any longer in the hope of more fully working out the numerous problems which press for solution. Meanwhile, pending the final publication of the four unavoidably bulky volumes in which the results of the ethnographic survey are embodied, I may be permitted to say that the present opportunity of laying before the Anthropological Institute a brief statement of some of the chief

conclusions which the inquiry seems to indicate is especially welcome. The criticism thus elicited will, I am confident, be of the utmost service to me in completing the work which still remains to be done.

I have already stated that the anthropometric branch of the survey was conducted on the system prescribed by Professor Topinard in his "Eléments d'Anthropologie Générale." From the numerous measurements suggested by him twelve were selected, and to these were added, under Professor Flower's advice, the bimalar and nasomalar dimensions recommended by Mr. Oldfield Thomas in his paper on the Torres Straits Islanders published in the "Journal of the Anthropological Institute" for May, 1885. These fourteen measurements were taken for fifteen castes and tribes in Bengal Proper, five in the Chittagong Hills, ten in the Darjeeling Hills, ten in Behar, seventeen in Chota Nagpore, twenty-three in the North-West Provinces and Oudh, and nine in the Panjab, in all eighty-nine distinct groups, comprising nearly 6,000 persons. The results have been tabulated in the usual form, and with certain introductory and explanatory matter fill two large octavo volumes.

The standard theory of the making of the Indian people is well known, and need not be elaborated at length. It is believed that a tall, fair-complexioned dolicho-cephalic and presumably lepto-rhine race, whom we have now Professor Sayce's authority for calling Aryans, entered India from the north-west and slowly fought their way, conquering and colonizing down the valleys of the great rivers. At an early stage of their advance they came into collision with a black snub-nosed race, who were partly driven away into Central and Southern India, where we find their descendants at the present day, and partly absorbed by the conquerors. Some writers, notably Colonel Dalton and Mr. J. F. Hewitt, discover among the remnants of the black race two distinct types or groups of tribes, known as the Dravidian and the Kolarian. The Dravidians are supposed to have entered India from the north-west, and the Kolarians from the north-east, and Mr. Hewitt, in a paper published in the Journal of the Royal Asiatic Society, goes so far as to speak of the latter as Mongoloid.

No one can have glanced at the literature of the subject and in particular at the Vedic accounts of the Aryan advance, without being struck by the frequent references to the noses of the people whom the Aryans found in possession of the plains of India. So impressed were the Aryans with the shortcomings of their enemies' noses that they often spoke of

them as "the noseless ones," and their keen perception of the importance of this feature seems almost to anticipate the opinion of Dr. Collignon that the nasal index ranks higher as a distinctive character than the stature or even than the cephalic index itself. In taking their nose then as the starting point of our present analysis, we may claim to be following at once the most ancient and the most modern authorities on the subject of racial physiognomy.

As measured on the living subject, the nasal index consists of the relation of the maximum breadth of the nose at its base outside the nostrils to its total height from the nasal spine to the root. It is expressed in the form of a percentage, the height of the nose being taken at 100. In a paper published in the "Revue d'Anthropologie" in January, 1887, Dr. Collignon proposes the following classification and nomenclature of the index:—

Ultra leptorhine	40 and under.
Hyper leptorhine	40 to 54·9.
Leptorhine	55 to 69·9.
Mesorhine	70 to 84·9.
Platyrhine	85 to 99·9.
Hyper platyrhine	100 to 114·9.
Ultra platyrhine	115 and over.

In the first place it will be convenient to distinguish the extreme types which are to be found within each of the three main groups. Under the head of platyrhine the following are the highest tribal averages:—

100	Malè or Male Pahàriá, also called Sauria or Sámil Paharia of the northern hills of the Santál Parganas, a very peculiar tribe usually classed as Dravidian	94·5
100	Mál Pahàriás (distinct from the tribe last mentioned) inhabiting the southern hills of the same district	92·9
21	Korwas, a wild and shy tribe of Chota Nagpore	92·5
100	Mundas, one of the most characteristic Kolarian tribes of Chota Nagpore	89·9
100	Kharwár of Chota Nagpore	89·7
100	Bhuiyas of Chota Nagpore, Dravidian... ...	88·7

Turning now to the opposite extreme there are among the leptorhine group:—

13	Gujars, a pastoral tribe of the Panjab	66·9
57	Lepchas of the Darjeeling Hills, a Mongolian tribe claiming to be the aborigines of Sikkim...	67·2

80	Pathán̈s of the Panjab	68·4
80	Sikhs of the Panjab	68·8
33	Awans, a trading caste of the Panjab	68·8
60	Biloches of Bilochistan	69·4
Under the head mesorhine we have:—		
19	Machhis, a fishing caste of the Panjab	70·0
100	Kayasths, the writer caste of Lower Bengal ...	70·3
100	Bengal Brahmans	70·4
27	Arora, a trading caste of the Panjab claiming equality with the Khatris	71·2
36	Tibetans of Sikkim	71·4
26	Bábhans of the North-West Provinces	73·0

Returning to the platyrhine group, I wish to lay special stress upon the fact that all the tribes included in it are perfectly compact and vigorous aggregates. All are strictly endogamous, three have a strong communal organisation of their own, and none show any signs of dying out or of becoming absorbed into other groups. Although a trained observer may sometimes be able to distinguish members of particular tribes, all the six tribes which I have mentioned conform in the main to a single physical type which is absolutely different from that of the average Hindu of the plains of Northern India. Putting aside for the moment the minor tribal characteristics which skilled observers profess to be able to detect, it may safely be said that the people I have mentioned are all of very dark complexion, the colour of the skin ranging from dark brown to a peculiar charcoal-like black, which is very striking. Their stature is low and their build is sturdy. Their appearance, in fact, is precisely that of the black, noseless, squat Dasyus described in the Vedas. It may be added that they appear to have great powers of resisting jungle fever, that most of them emigrate readily to the Indian tea districts of Assam and to the West Indies, and that the work of opening up the remotest and most unhealthy tea plantations of Assam has been done by them and by cognate tribes.

In respect of certain characteristic customs the platyrhine group are equally distinct from the higher and intermediate strata of the population. Their system of exogamy is based upon totems, not on the eponymous or local groups which we find a few stages higher up. As a rule their daughters are married as adults; a bride-price is paid; and there are no signs of the bridegroom-price so common among the higher castes in India. Widows are allowed to marry again, and are usually expected to marry their late husband's younger brother. Divorce is readily allowed; divorced women may marry again, virginity

is little prized, and the relations of the sexes are characterised by considerable laxity. Their religion is of the type which, for want of a better name, we may call animistic, its leading idea being that man is compassed about by a multitude of powers (I prefer not to call them spirits) mostly destructive and malevolent, which require constant propitiation in some material form. This is the real working belief of the six tribes which I have named, though two of them—the Bhuiyas and Kharwars—have added to it a slight and partial veneer of Hinduism.

The leptorhine and mesorhine groups include, with two exceptions, the social aggregates among which we should *primâ facie* expect to find the largest revival of Aryan characteristics. The exceptions are the Lepchas and Tibetans of Sikkim, the former of whom are leptorhine at 67·2, while the latter are mesorhine at 71·4. For both groups, however, the naso-malar index prescribed by Mr. Oldfield Thomas denotes their Mongolian origin, and places them outside the Indian series of groups. For the rest the only point deserving special notice appears to be the high place in the mesorhine group taken by the Brahmans and Kayasths of Bengal. This seems to bear out the traditional account of the north-western origin of these castes and to refute the not uncommon opinion that they are mainly of non-Aryan descent. The latter conjecture indeed appears to rest upon no more solid basis than the general impression that the Bengal Brahmans are as a class darker than the Brahmans of the North-West Provinces. The impression may be correct; but colour is hard to judge, and no satisfactory means of recording its gradations has so far as I know yet been devised. Summing up the entire body of evidence furnished by the nasal index we may say that it establishes the existence in India of two widely distinct types, the one platyrhine to a degree closely approaching to the negro, and the other leptorhine in much the same measure as the population of Southern Europe. Between these extremes we find a number of intermediate types, the physical characteristics of which suggest the inference that they must have arisen from the intermixture of members of the extreme types and their descendants. It is true that the rigid enforcement of the caste principle at the present day renders any such intermixture impossible, but it may be gathered from the account of the caste system given in the so-called Institutes of Manu that the rule of endogamy was less stringent in earlier times.

The most notable feature of these statistics of the nasal index is, however, their correspondence with—I should perhaps say their concomitant variation in relation to—two other sets of facts independently ascertained. I mean first the order of social

precedence and secondly the character of the exogamous subdivisions by which the matrimonial arrangements of every caste are regulated. Take the fifteen castes of Bengal Proper, the two castes of Behar, the seventeen castes of Chota Nagpore, and the twenty-three castes of the North-West Provinces for which this index has been measured, arrange them in the order of the nasal index, putting the lowest or most leptorhine index at the top, and it will be found that the order thus arrived at corresponds substantially with the order of social precedence. Everywhere the Brahman Kayasth and Rajput stand at the top of the list; everywhere the Chamar and Musahar are at the bottom. Within certain geographical boundaries it may be laid down at least as a working hypothesis, if not as an absolute law, that the social position of a caste varies inversely as its nasal index. I say within certain boundaries, because the figures for the nine castes measured in the Panjab do not appear to conform to the rule. But with regard to the Panjab it is possible that fuller inquiry may show either that the same law holds good, or that its disappearance marks the limit beyond which there has been little or no intermixture with the platyrhine type. The existing statistics are clearly inadequate. I may explain that the Panjab government were in such extreme financial difficulties when my inquiries were going on that they were unable to give any assistance or even to pay for the necessary instruments, and I owe the few figures we have to the exertions of Dr. Stephen, Sanitary Commissioner of the Panjab and the voluntary labour of Alauddin, a Civil Hospital-Assistant in Lahore.

The correspondence between the nasal index and the character of the exogamous subdivisions of various castes is equally striking. In the course of the ethnographic survey, special pains were taken to ascertain these groupings, and long lists of them have been arranged and classified for publication. These, as I shall afterwards have occasion to explain, are probably the most valuable social data that can now be collected. For the present I have only to point out that in Bengal Proper castes with a platyrhine index have totemistic exogamous divisions; that castes with indices between 85 and 80 have a mixture of totemistic eponymous and local groups; the tendency being as Mr. Andrew Lang has excellently expressed it, for the totem to "slough off," as the caste goes up in the world; that castes with indices between 80 and 75 have a mixture of local and eponymous sept-names, and that castes below 75 have eponymous septs. In Behar and the North-West Provinces, the totem is not so prominent, the influence of the higher castes has been stronger, and eponymous groups are found associated with higher indices than is the case in Bengal. Conversely in Chota

Nagpore, the totem-groups hold their own undisputed down to an index of 79, and possibly lower. These variations admit of being readily accounted for by reverence to local conditions, but I will not attempt to analyse them further here. Enough has been said to prove that a high average nasal index is usually, I may even say invariably, found along with low social position and totemistic subdivisions, while conversely a low index denotes high social rank and a system of eponymous subdivisions.

Reference has already been made to the naso-malar index devised by Mr. Oldfield Thomas, as a substitute for Professor Flower's naso-malar angle, and described in Mr. Thomas's paper on a collection of human skulls from Torres Straits, published in the "Journal of the Anthropological Institute" for May, 1885. In September, 1886, Professor Flower kindly drew my attention to this index as the only method by which the relative preponderance of a Mongolian or Caucasian element can be detected. He added, "If you can apply it to your border tribes—Lepchas, &c.—and then see if the character crops out in any of the hill tribes of Central India, I shall be greatly interested; in fact, for this special point, the supposed affinity of the latter with the Mongolian races, I would prefer this to any other measurement, as platyopy is certainly far more characteristic than brachycephaly of these races."

This index has been taken for 54 castes and tribes, viz., 8 in Bengal Proper, 5 in the Chittagong Hills, 10 in the Darjeeling Hills, 5 in Behar and the North West-Provinces, 17 in Chota Nagpore, and 9 in the Panjab. The average for the Panjab groups is 116, ranging from 113·1 in the Khatri, a trading caste of Aryan type, to 117·9 in the Biloch, 117·1 in the Pathan, and 116·6 in the Sikh. In the Chittagong Hills on the other hand, the Kuki have an index of 106·2, and the Chakmas of 106·4, while the index of the Maghs is 107·7. Of the Darjeeling tribes the Limbu average 106·9, the Khambus 107·1, the Lepchas 108·1. Forty-nine Tibetans of Tibet yield an average index of 108·8, 36 Tibetans of Sikkim give 108·9, 19 Tibetans of Bhutan 109·1. The Newars, who claim to be the aborigines of Nepal, show an index of 101·2. In Bengal the Mâl Paháriá have an index of 109·8, and the Malé of 110, while the Rajbansi or Kochh, a very large tribe recently promoted to the status of a caste, show an index of 110·8. Seventeen tribes of Chota Nagpore yield an average of 110·4, ranging from 107·6 in the Birhor to 114·2 in the Dom.

Among the large tribes we get the following results in ascending order—

Kharwar	...	...	109·4
Bhuiya	...	...	109·6

Santal	...	...	...	110·6
Munda	...	...	...	111·3
Oraon	...	...	...	113·6
Bhumij	...	...	...	113·8

As regards the known Mongolian tribes of the northern and north-eastern frontier, and the apparently Aryan races of the Panjab, the naso-malar index gives very clear and satisfactory results. Unlike most measurements taken on the living subject it appears to admit of comparison with cranial indices such as those given by Mr. Oldfield Thomas in the paper already referred to. I may venture, however, to suggest that the classification proposed by Mr. Thomas into—

Platyopic	=	races having	indices	below 107·5,
Mesopic	=	„	„	107·5 to 110·0,
Pro-opic	=	„	„	above 110·0,

may require reconsideration, in view of the fact that the superior limit of the index appears from the Panjab figures to run in individual cases as high as 125 and over. In order to include such unquestionably Mongolian types as the Gurung tribe of Nepal, I should be inclined to extend platyopy to 109·9 or 110, to reckon mesopy from 110 to 112·9, and to count only indices of 113 and over as pro-opic. But it is perhaps premature to make any proposals of this sort until further data have been collected.

The bearing of the naso-malar index on the problem of the racial affinities of the black races of Chota Nagpore and Central and Southern India needs to be considered in the light of its relations to the cephalic and nasal indices. Judging from the naso-malar index alone, one would be inclined to say that the hypothesis of their Mongolian origin might be tenable. But when it is observed that a low naso-malar index, which in the Darjeeling and Chittagong tribes is always associated with a brachycephalic cranium, occurs among the so-called Dravidians and Kolarians in connexion with dolichocephaly and mesaticephaly tending towards dolichocephaly, and that the most dolichocephalic types are also those which have the lowest naso-malar index, it is clear that some other explanation of their tendency to platyopism must be sought for. This conclusion is strengthened by the difficulty of reconciling their extremely dark colour and their nasal index approaching to that of the Negro with the theory of their Mongolian descent.

With the cephalic index I will deal very briefly, and will endeavour to abstain from reciting figures. Taking Bengal Proper as our starting point, we find on the eastern and

northern frontiers a fringe of brachycephalic races, intercourse with whom is more or less frequent according to the means of communication available at different seasons, the occasions for trade, and the varying political relations between the hill tribes and the dwellers in the plains. We observe also, among certain of the Bengal castes, a distinct tendency towards brachycephaly, which shows itself in the Mahommedans and Chaudals of Eastern Bengal (indices 78·0 and 78·1), is more distinctly marked in the Kayasths (78·3), and reaches its maximum in the Bengal Brahmans (78·7). Bengal, then, taken as a whole, exhibits a high range of mesaticephaly verging on brachycephaly. On the north-west and west of Bengal Proper lie Behar and Chota Nagpore, both mesaticephalic with a tendency towards dolichocephaly; but in the case of Behar, the Brahmans, unlike those of Bengal, belong to the latter or dolichocephalic type, while in Chota Nagpore the wilder non-Aryan races are the most dolichocephalic. Further up the Ganges valley the people of the North-West Provinces are wholly dolichocephalic, and the same may be said of the Panjab, with the exception of trans-Indus people, like the Páthan and Biloch.

These facts seem to afford some ground for the conjecture that the peculiar and characteristic type of feature which distinguishes the higher castes of Bengal Proper from the corresponding ranks of society in Northern and Western India may be due to an infusion of non-Aryan blood, derived, not from the black races of Central and Southern India, but from the brachycephalic Indo-Burmese stocks further east.

Another point to be noticed is that the dolichocephaly so conspicuous in the North-West Provinces, may be a mark of Aryan or non-Aryan descent according to the social standing of the caste in which it occurs. The Brahman of the North-West Provinces is dolichocephalic at 73·1, the Kol of the same area at 72·4; but it is impossible to suppose that the two groups have derived this characteristic from the same source, and the prevalence of dolichocephaly among the unquestionable non-Aryans of Chota Nagpore seems to afford a clue to the difficulty. The Kol gets his long head from the non-Aryan races to whom his colour and the proportions of his nose affiliate him, while the Brahman's dolichocephaly comes to him from the Caucasian stock.

Two more points out of the fourteen which have been observed demand a brief notice here. Cuvier's facial angle, as measured by Professor Topinard's goniometer, has recently been made the subject of an elaborate study by Dr. Collignon, who concludes that, notwithstanding the limited range of variation in the averages deduced from it, this angle is a measurement

of the first rank, because it expresses exclusively an ethnic characteristic, and the data which it furnishes are not correlated to any other character. I may add that Professor Topinard's goniometer, several of which have been made for me by Collin, of Paris, is an instrument of great accuracy, easy to work, and not at all liable to get out of order.

I select from the mass of data available the following cases of low and high averages:—

Low.		High.	
Magh of Chittagong Hills ..	63·5	Gujar of Panjab	70·7
Mahommedan of Eastern Bengal	63·7	Sikh	70·4
Lepcha of Darjeeling Hills ..	64·1	Biloch	70·3
Kayasth of Bengal	64·2	Rajput of N.W.P.	69·6
Bhumij of Chota Nagpore ..	64·3	Brahman of Behar and N.W.P.	68·7
Tibetan of Tibet	64·4	Brahman of Bengal	67·1

It will be seen that the half-dozen highest average indices include three tribes of the Panjab and north-west frontier, and the Rajputs and Brahmans of the Ganges valley. The other group is a curious medley of races among which it is difficult to account for the presence of the Bengal Kayasths, a caste of fairly high social position and considerable intellectual attainments.

The figures of stature are very interesting, but I have not space to devote to them more than a few passing remarks. The lowest average stature, 156·2 centimetres, is found among the servile weaving caste of Chota Nagpore; the highest, 171·6, among the Sikhs. The nine Panjab castes give an average of 168·4; twenty-three castes of the North-West Provinces show 163·5; ten of Behar, 163·0; fifteen of Bengal, 162·0; ten of the Darjeeling Hills, 161·2; eighteen of Chota Nagpore, 160·2; five of the Chittagong Hills, 159·2. In connection with the statistics of height, I venture to draw attention to the height and weight index, which shows the number of grammes per centimetre of height, and thus serves to distinguish certain types of figure. Again selecting extreme cases, I find that the Munda tribe of Chota Nagpore have an average index of 372·6, and the Tibetans of Sikkim, 370·7, while the trading Khatri caste of the North-West Provinces show 290·7. The Sikh index is 320·2, the Lepcha, 350·5, the Gurung, 331·6.

The foregoing analysis enables us to distinguish three main types in the population of India at the present day, viz:—

I. A leptorhine, pro-opic, dolichocephalic type, of tall stature, light build, long and narrow face, comparatively fair complexion, and high facial angle. This type is most marked in the Panjab. Their exogamous groups are eponymous, names of Vedic saints or heroes.

II. A platyrhine, mesopic or nearly platyopic, dolichocephalic type, of low stature, thick-set made, very dark complexion, relatively broad face, usually low facial angle. This type is most distinct in Chota Nagpore and the Central Provinces. Its sections are totemistic, like those of North American Indians—that is, they are names of animals, plants, or artificial objects, to all of which some form of taboo applies.

III. A mesorhine, platyopic, brachycephalic type of low or medium stature, sturdy build, yellowish complexion, broad face and low facial angle. This type is found along the northern and eastern frontiers of Bengal. Their exogamous groups are very curious, being mostly nick-names of the supposed founder of the sept, such as "the fat man who broke the stool," and others less fit for publication.

Assuming that these three types may be taken to represent so many distinct races or stocks, the question then arises, can we in any way account for them or affiliate them to other known families of mankind? In the case of the brachycephalic and platyopic type no difficulty presents itself. All of the groups which come within this category are demonstrably of more or less pronounced Mongolian descent; and we may conveniently call them Mongoloid. The type, as I have already remarked, is essentially a frontier type, and its influence can in no case be traced far into the interior of India. The Kochh or Rajbansi, a large tribe of Bengal, who now pose as an outlying branch of the Rajputs, are indeed commonly supposed to have some strain of Mongolian blood among them, but I doubt whether this opinion is well founded. A slight degree of platyopy is, it is true, met with among them, but this may equally well be accounted for on the supposition of their affinity to the platyrhine type.

Special interest attaches to the leptorhine dolichocephalic type in view of Herr Karl Penka's recent advocacy, in "Origines Ariacae" and "Die Herkunft der Arier," of the possible Scandinavian origin of the Aryans. If it be accepted that Herr Penka has proved the typical Aryan to be dolichocephalic, there would seem to be some grounds for believing that in the dolichocephalic leptorhine type of the Panjab and north-western frontier at the present day we may recognise the descendants of the invading Aryans of 3,000 years ago, changed no doubt in hair, eyes, and complexion, but retaining the more enduring characteristics of their race in the shape of their head, their stature, and the finely cut proportions of their nose. Survivals of fair or rather reddish hair, grey eyes, and reddish blonde

complexion are moreover still to be found, as Penka has pointed out, and as I myself have seen, among the Kafirs from beyond the Panjab frontier. Any way the striking preponderance of dolichocephaly in the Panjab and the North-West Provinces and its gradual increase as we travel up the Ganges valley towards the traditional Aryan tract, tend both to strengthen Penka's hypothesis and to enhance the credibility of early Indian legends. These facts go also to show that Penka is mistaken in supposing that the Indian branch of the Aryans became brachycephalic on their way to India. Had this been so, the dolichocephaly which now distinguishes them could only have been derived from crosses with the black race, and the Aryans could hardly have become dolichocephalic in this way without also becoming platyrhine.

Turning now to the platyrhine type we may observe that the figures show the current distinction between Dravidians and Kolarians, on which stress has been laid by Dalton and others, to be a purely linguistic character not corresponding to any appreciable differences of physical type. We may claim therefore for these data that they have accomplished the task set before himself by Mantegazza in his "Studii sull' Etnologia dell' India," and "erased the Dravidian colour from the ethnic chart of India," though not precisely in the manner contemplated by the Italian anthropologist. The hypothesis of the north-eastern origin of the so-called Kolarians urged by Colonel Dalton and recently advocated by Mr. J. F. Hewitt, must also be abandoned as inconsistent with the dolichocephalic skull of the typical representatives of the group. Whatever the Kolhs may be, they certainly are not a Mongoloid race.

The remarkable correspondence between the gradations of type as brought out by certain indices and the gradations of social precedence further enables us to conclude that *community of race*, and not, as has frequently been argued, *community of function*, is the real determining principle, the true *causa causans*, of the caste system. Everywhere we find high social position associated with a certain physical type and conversely low social position with a markedly different type. The conclusion thus suggested is confirmed by evidence derived from the character of the exogamous divisions. Divisions of a totemistic and therefore more primitive character occur among tribes of a lower social position and of lower physical type, while divisions taking their names from saints or heroes, which indicate a more advanced stage of social development, are met with in endogamous aggregates of higher physical type and higher social position. It is difficult to see how this state of things could have resulted from the operation of the principle

laid down by Mr. Nesfield in his sketch of the Caste System of the North-Western Provinces and Oudh, that function and function alone has determined the formation of the endogamous groups which in India are called castes. Moreover, had the latter principle been the true motive power of the system, it is hard to understand why within a limited area subject apparently to similar social influences, we should find a large number of castes all following the occupation of agriculture in precisely the same way, but nevertheless insisting vigorously upon the essential differences of blood which in their view render intermarriage a thing impossible and inconceivable. The subject is too large and too intricate for me to attempt any detailed exposition of it here, and I must content myself with merely stating in general terms the conclusion which the recent measurements appear to indicate, viz., that the Indian caste system is a highly developed expression of the primitive principle of *taboo* which came into play when the Aryans first came into peaceful contact with the platyrhine race which we may provisionally call Dravidian. This principle derived its initial force from the sense of difference of race as indicated by difference of colour, and its great subsequent development has been due to a series of fictions by which differences of occupation, differences of religion, changes of *habitat*, trifling divergencies from the established standard of custom, have been assumed to denote corresponding differences of blood and have thus given rise to the formation of an endless variety of endogamous groups. As an illustration of some of the processes to which I refer, I may be permitted to analyse very briefly the internal structure of the Bagdi caste of Western Bengal.

The Bagdi have a nasal index of 80·5, and a cephalic index of 76·3. Their facial angle is 64·9. They stand at the bottom of the Hindu social system, and no member of the upper or middle classes can take water from their hands. Their exogamous subdivisions are partly totemistic, and partly eponymous, the latter groups having been borrowed from the low Brahmans who minister to their spiritual necessities as an outward and visible sign of their enrolment in the Hindu system. In the district of Bankura, where the original structure of the caste seems to have been singularly well-preserved, we find the Bagdis divided into the following endogamous sub-castes: (1) Tentulia, called after the tamarind tree; (2) Kasaikulià, named from the Kasai river. These two groups work as masons, and also prepare the lime which is mixed with the betel leaves and areca nut chewed by all classes of natives of India. (3) Duliá Bagdis carry palanquins or *dulis*, and in common with the other sub-castes,

earn their livelihood by fishing, making gunny bags, weaving cotton, and preparing the red powder (*abir*) used in the Holi festival. The Bagdi fisherman uses the ordinary circular cast-net, but swings the net round his head before casting it, a practice which is supposed by the regular fishing castes of Bengal—Tiyar, Mál and Kaibarlta—to be peculiarly dishonourable. Of the other sub-castes—there are nine in all—the Máchhuá and Mallametiá derive their name from fishing; the Kusmetia are called after the *Kusa* grass; the Ojha are, or are supposed to have been, the priests of the tribe. Among the Bagdis of Orissa the grotesque tale is told how, once upon a time, the gods being assembled in council, a goddess suddenly gave birth to three sons, and feeling embarrassed by the situation, hid the first under a heap of tamarind (*tentul*) pods, the second in an iron pan, and the third under a hermit's staff. From these vicissitudes of their infancy the children got the names which the sub-castes descended from them still bear. To us this apparently foolish story is of interest as marking the transition from the tribe to the caste. It can only have arisen when the Bagdis had in some measure cast in their lot with Hinduism, and had begun to feel the want of a mythical pedigree of the orthodox type. The mention of the tamarind pods in particular furnishes an excellent example of a myth devised for the purpose of giving a respectable explanation of the totemistic name Tentulia.

Within the sub-castes again are a number of exogamous sections, among which may be mentioned *Kásbak*, the heron; *Ponkrishi*, the jungle cock; *Salrishi*, or *Sálmáchh*, the *sál* fish; *Pátrishi*, the bean; and *Kachehap*, the tortoise. The totem is taboo to the members of the section—that is to say, a Kàsbak Bagdi may not kill or eat a heron; a Pátrishi, like the Pythagoreans according to Lucian, may not touch a bean.

It is difficult for the average European to realise the gulf which separates the Bágdis and the platyrhine group below them from the higher castes of the Hindu system. In some districts these outcast races are even excluded from the village schools, and everywhere they are looked upon as belonging to a different family of mankind.

In conclusion, I will state briefly what appear to be the most important results which the recent inquiries tend to bring out:—

I. They show that India is a peculiarly favourable field for anthropometric researches. The caste system, by prohibiting marriage outside the caste group, practically eliminates the element of *métissage* or crossing, which Topinard, Collignon, and other observers notice as confusing and impeding anthropometric observations in Europe. In other respects also India has great

advantages. The number of subjects available is virtually unlimited, and observations can be repeated and tested *ad libitum*.

The wilder races, such for instance as the Kols, are strong and numerous, and have not been affected by contact with European civilization. They are readily accessible, interpreters can be easily obtained, and the scientific inquirer, even if he know no Oriental language, would have little difficulty in pursuing inquiries on any line he might wish to follow up. I say this in the hope that members of this Society may be led to follow the prevailing fashion of making a winter tour in India. To any such enterprising ethnologist I can promise an abundant supply of fresh and interesting material.

II. Secondly, I think we may claim that the anthropometric method, and in particular the combination of that method with observations of social usage in the manner I have attempted to illustrate, promises to give us a scientific basis for Indian ethnology, and to enable us at the close of the next census to classify our results on a more or less rational system. It will be something if we can establish that the distinction between Dravidian and Kolarian races has reference solely to differences of language, and that the two groups belong to the same main stock.

III. Thirdly, the inquiry has drawn attention to the wide prevalence of totemism in India, and to the existence of several very singular modes of giving effect to the custom of exogamy.[1]

IV. It also throws much light upon the practice of infant marriage and the rule that a widow may not take a second husband. It shows that these ordinances—the positive one that a man must get his daughter married before puberty on pain of losing caste himself, and the negative one that a widow, even if a virgin, may not marry again—are regarded almost universally as badges of social distinction. A caste which observes them is in the way of salvation and may hope to rise in the social scale; while a caste which disregards them is ranked with the platyrhine Dravidians. Unhappily the form of infant marriage which is gaining ground is the Bengal form, which favours consummation even before puberty, and which tends to produce pregnancy at an abnormally early age. It would seem that such a custom must in the long run lead to physical degeneration, and must enhance the prevalence of those special diseases which Lady Dufferin's Fund endeavours to alleviate. So also with widows. As long as the prohibition of widow re-mar-

[1] See "Primitive Marriage in Bengal." "Asiatic Quarterly Review," July, 1886.

[2] See "Widow and Infant Marriage in Bengal." "Asiatic Quarterly Review," July, 1887.

riage remains a monopoly of the higher castes, the number of widows—large though it may be—does not amount to a serious social evil. But an indefinite extension of the prohibition by means of the imitative process now so rapidly going is not a prospect that can be regarded with indifference.

V. Finally, I have a practical suggestion to make which I would ask the Council of this Society to take into consideration. The British Association has already urged upon the Government of India the desirability of extending anthropometric observations to Bombay, Madras, and other parts of India, and has suggested that the exogamous and endogamous groupings of all tribes and castes should be recorded in the Census of 1891. This is good, so far as it goes; but I should like to go still further, and attempt to initiate a permanent system of inquiry into custom throughout India. The system of circulating a set of questions and getting persons interested in ethnology to collect replies worked very well in Bengal, and I see no reason why it should not be extended to other parts of India. It would cost the Government next to nothing, and it offers the only prospect of ascertaining and recording a mass of interesting and instructive usage, which the spread of Brahmanism, favoured as it is by the extension of railways, is tending to obliterate. I propose then that the questions used in Bengal, which were based on those drawn up by a committee of the Anthropological Institute in 1874, should be revised by the Council with reference to Mr. Frazer's excellent series of questions and the various continental *questionnaires*, and that we should then approach the Government of India with a scheme for circulating them in India and collecting replies for the entire continent. In almost every district I believe we should find men ready to take up the work, and the data thus collected would be of the utmost value.

Discussion.

Dr. G. B. Longstaff enquired whether, in the case of the exogamous subdivisions described as existing in the Bagdi caste, the name of the subdivision went by the male or by the female side; whether, for example, the children of a father belonging to the heron group and a mother belonging to the tortoise group would be herons or tortoises.

Dr. Leitner and Dr. Garson also joined in the discussion.

Mr. Risley explained that in all the exogamous groups which had come to his notice in Bengal the designation of the group, whether totem, eponym, or local name, descended in the male line, so that the children of a heron man by a tortoise woman would be herons and not tortoises. Traces of female kinship exist farther east in the Cossya hills, and some survivals may perhaps be found in Bengal itself.

NOVEMBER 25TH, 1890.

Professor W. H. FLOWER, C.B., F.R.S., *Vice-President, in the Chair.*

The Minutes of the last meeting were read and signed.

The election of HENRY BLACKWELL, Esq., of Milk Street, Cheapside, was announced.

The following presents were announced, and thanks voted to the respective donors :—

FOR THE LIBRARY.

From MRS. GALLENGER.—Un Viaggio a Nías. Di Elio Modigliani.

From A. W. FRANKS, Esq., C.B., F.R.S.—Statement of Progress and Acquisitions made in the Department of British and Mediæval Antiquities and Ethnography of the British Museum in the year 1889.

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The following paper was read by the Author:—

The YOUROUKS *of* ASIA MINOR.

By THEODORE BENT, Esq., M.A.

THE study of the habits, customs, and origin of the nomad tribes of Asia Minor is an exceedingly complicated and difficult one. There is an undercurrent of secrecy and mystery about them all, an unwillingness to communicate to the passing stranger anything about themselves, their customs, and more especially their religious opinions. Outwardly, they are all Mohammedans, though in their wild nomad life they never see either a mosque or an imam. Last summer I gave the results of my enquiries into the religious tenets of the Ansairee who dwell in and around Tarsus, and the secrecy with which they enshroud their belief. Investigations amongst the Afshars, the Kizilbashi, and the Yourouks, lead me to imagine that this secret religion is not confined only to the Ansairee, but is the religion of nearly all the nomad races who wander to and fro in the mountainous districts between the Mediterranean and the Caspian.

This evening I will confine myself entirely to the Yourouks, and set before you what anthropological facts I collected whilst amongst them, and, I will here bear testimony to the value of the anthropological "Notes and Queries" which suggested most appropriate questions just at those moments of emergency when one's mind assumes a steady blank and refuses to act.

The Yourouks, who inhabit the southern coast of Asia Minor and the heights of the Taurus, are of two distinct races, of origins quite as far apart as the Greeks and the Bulgarians of the Balkan peninsula. The Turks, however, have not distinguished between them, and call them all Yourouks. The first of these are called *Takhtagee*, and principally occupy themselves in wood cutting and charcoal burning. This name is derived from the word *takht*, a plank, and refers to their occupation; they prefer, however, to be called *Allevi*, the origin of which name I do not know. These people are generally to be found in such

parts of the district as are covered with forests, which they are year by year destroying, whereas the other branch of Yourouks are strictly pastoral, and are found in their tents in open spaces, or amongst the low brushwood which is suitable as fodder for their cattle.

First of all we will speak of the Takhtagee Yourouks. (Yourouk is derived from the Turkish word *youroumek*, to wander.) We came across them chiefly in Lycia and the confines of Pamphylia. Many of them adopt a semi-sedentary life, and dwell in huts built of rough stone, with walls three or four feet high, and a round thatched roof without central support, reminding one forcibly of the round Turkoman tents, from which pattern this form of architecture is doubtless derived.

The religious ideas of the Takhtagee are decidedly peculiar and suggestive of not only the Ansairee of the Lebanon, but also of the Yezedee from the district near Mosul. Their belief in the transmigration of souls is very marked: to them the peacock is the embodiment of evil, yet it is an animal which may rise to a higher position in a future existence. This at once connects them with the Yezedee, or so-called devil worshippers, who, as Dr. Badger relates in his history of the Nestorians, worship a brass representation of a peacock, *Melek Taoos*, or King Peacock, as they call it in their secret assemblies, which they consider to be the god of evil, and therefore the one to be most propitiated. Like the Yezedee, the Takhtagee never use the word *Sheitan*, and shudder if anyone else makes use of that very common Turkish oath. Ali to them is the great prophet, the latest and most perfect incarnation of the diety, which connects them at once with the Ansairee of the Lebanon, and the Ali-ullah-hi of Northern Persia, to both of whom Ali is God. There are many stories in connection with the secret assemblies of the Takhtagee, but most of them, I should imagine, like those told about the Ansairee, are chiefly the calumnies of their enemies. Curiously enough, the Takhtagee wash like the Shütes of Persia, from the wrist upwards, not like the Sonnee who wash in the reverse direction.

Perhaps in this secret form of religion we may be confronted with the survival of some heathen cult, perhaps it may be a half-formed or decayed form of Christianity. About the Ansairee, I have stronger opinions than about the Takhtagee. I feel at present wholly unable to form any definite opinion.

The physique of this race is peculiar; they have long, pointed heads, and it is a common custom amongst them tightly to bind the heads of their infants; whether this peculiarity is due to this custom or not, I am not prepared to offer an opinion.

The best time to study the Pastoral Yourouk is during the

winter, when they come down to the plains near the coast with their flocks and herds. This is their *Kishla*, or winter quarters (derived from *Kish*, winter), as opposed to the *Yaela*, or summer quarters (derived from *Yas*, spring).

Most of the inhabitants of the low-lying towns and villages go up to the mountains for their *yaela* in summer, so that during this period you can never be quite sure that you have got a genuine Yourouk or not for your study. The Yourouks are a finer race than the Takhtagee, lithe of limb and seldom under six feet in height.

Some of them have adopted a semi-sedentary life for three months of the year, dwelling in hovels erected out of ancient ruins, in the tombs of the ancient Greeks, but as soon as spring comes their abodes become uninhabitable from vermin, and they betake themselves again to their tents. They are an exceedingly peaceful and law-abiding race, a great contrast to their neighbours the Afshars, Kourds, and Circassians, whose habitat is more to the east, and the Turks look upon them as the policemen of the mountains, and they are always ready to give information concerning the thefts and smuggling of the less peaceful tribes, several instances of which came under our notice.

The natural abode of the Yourouk is his black goat's-hair tent, with the camel pack-saddles built round for a wall and the family mattresses spread in the midst; his life is occupied in looking after his flocks, and according to the season he moves from one pasture to another.

Their year they divide into three seasons—namely, *Yas*, spring, five months; *Güs*, summer, four months; and winter three months, which they again subdivide into three parts. (1) *Kampsin*, fifty days; (2) *Karadès*, black winter, ten days; and (3) one month, March, *Zembrai*, or the opening.

They are a fine, active race, insensible to fatigue and hardship, tall and strong, with open countenances, usually dark hair, but lighter complexions than most other tribes in Asia Minor. They dress in loose cotton clothes, and their women do not veil their faces. Their infants they swaddle, first binding round the child's body a rag containing earth heated with a stone; but infant mortality is enormous amongst them. Nearly every woman has had a large family, of which only two or three survive. Hence the survival of the fittest, and the healthy lives they lead contribute to the fineness of the race: they also tightly bind the infant's head, for what purpose I do not know. We found a considerable percentage of idiots amongst them, whom they treat with superstitious care; and many instances of abortion in the shape of infants without arms, a wrong number of fingers, &c. One man, from the village of Tapan,

north of Sis, had a horn like a goat's horn growing on his head. He is, I hear, coming to Europe to exhibit himself.

Diseases are uncommon amongst them, except *teletmeh*, or throat disease (to cure which they wrap the patient in the warm skins of newly-slaughtered animals), and spleen, which they treat with poultices and decoctions of mountain herbs.

Their intercourse with the outer world is very limited; often a well-to-do citizen of some town furnishes a body of Yourouks with flocks by contract; the Yourouk to provide so many okes of milk, cheese, butter, &c., whilst the tribes get what milk is over, the hair, &c., and the contractor agrees also to keep up the flock, if by chance it diminishes. This is termed "an immortal contract." In this way the Yourouks often amass flocks of their own, and in time pay off the lender. Their communication is generally done by tallies.

These nomads are very destructive to the country they travel over; lighting their fires beneath trees, they ruthlessly destroy acres of timber, and the valleys of this part of the Taurus are rich in tall, straight fir-trees used for masts; then they lay bare whole tracts of country, that they may have fodder for their flocks, and nothing is so destructive to timber as the habit they have of tapping the fir-trees near the root for the turpentine. A deep notch is cut, and the turpentine all flows to this part. After a while the tree is cut down, and the wood in the vicinity of the notch is used for torches, the only light they make use of. Again, they bark the cedars to make their beehives, and for roofing purposes, and are the most destructive enemy the forests of Asia Minor have. Luckily, the vast extent of forest and the sparsity of inhabitants makes the destruction of timber less marked; but it is a steady destruction if slow, and must in the end ruin the forests of the country.

In his mountain wanderings the Yourouk has regular visitors at stated times. The goat and sheep merchant comes in the spring, pitches his tent in a central place, sits with the big men of the tribe around him on cushions, smokes his narghili, and has a pot of coffee boiling in the embers, and buys from those who are willing to sell. When he has amassed as many as he can conveniently manage, he sets off to the nearest town to realize a large profit.

They are great camel-breeders, and produce the valuable sort of mule camel, common to Asia Minor and known as the Toulou camel, a cross between the Bactrian and the Syrian; and in spring large Bactrian stallions are brought round amongst the encampments. This cross produces a camel excellent for mountaineering purposes, alike impervious to the snows of the mountains and the heat of the plains.

Then the tax collector comes to gather in the Ashr, or tax on their cattle; he also pitches his tent, and is surrounded by the leading men, but as often as not he has a lot of trouble, for when they are advised of his advent the Yourouks hide a portion of their flocks in out-of-the-way caves to avoid the tax. Then comes the travelling tinker to mend their copper pots—the great importer of external gossip amongst them; he settles for a few days at each place where he finds ten or more tents, with his bellows and his assistant, and mends with nitre the quaint-shaped coffee-pots and household copper utensils which they use, in return for which he gets butter and cheese, and with these he returns to the town as soon as he has got together as much as his mule can carry. Visits are also periodically expected from the wool merchants, skin dealers, and the public circumciser, who initiates the young Yourouks into the first mysteries of the Mohammedan faith.

In food the Yourouks are exceedingly frugal—their bread in times of plenty is made of flour, in times of famine of acorns; it is of the oatcake type, and baked with great dexterity by women on copper platters over a few embers—cakes with vegetable inside, milk, cheese, and very rarely meat, and no wine. Coffee, however, is essential to them, and often I have wondered what these nomads, so unchanged in everything else, did before coffee was made known, until one day when coffee ran short an excellent substitute was provided for us, made of the seeds of a fine species of thistle, botanically termed *Gundelia Tournefortia*, for it was discovered by Gundelscheimer and Tournefort, who calls it the "finest plant in the whole Levant," though he apparently was not aware of its use. It grows in dry stony places all over the southern slopes of the Taurus, and is, I understand, very plentiful in Afghanistan. The coffee produced by it is a little lighter in colour, but more aromatic and bitter than ours; they use it also as a stomachic.

By boiling the cones of the *Juniperus drupacea* in a large cauldron for a long time, a thick sweet stuff is produced; this they mix with flour, and the result is not unlike chocolate cream, and they call it *pelteh*.

In producing material from the mountain herbs the Yourouks are very cunning. Before aniline dyes were invented they drove a good trade in colours, but now it does not pay them to continue making them, and European dyes are used by their women in making the Karamanian carpets. The milk of a spurge, called *Galaxhidi* by the Greeks, is boiled with onion leaves. When the wool is put in, the colour does not at first appear until it is plunged into cold water, when a brilliant red is the result. From the gall of the *Quercus infectoria* they make another dye—in

fact, their mountains are covered with herbs useful for all kinds of purposes.

The Yourouk will do anything for tobacco. When it is not forthcoming they make use of certain leaves known to them, and even are known at times to use smoke-dried fig-leaves.

The Yourouks are an exceedingly polygamous race. Poor though he is, a man will often have seven wives, or more properly speaking, seven slaves. Each wife generally occupies a different tent; one minds one portion of the flock in one part, another in another direction, another wife looks after the camels, another stays at home to weave carpets, another collects wood and fetches water; and he must be a very poor man indeed who cannot boast of at least three wives. The natural result of this is that the female population, though in excess of the male, is not enough to meet the demand, so that much is done in the way of woman stealing, and if report speaks truly, a Yourouk who wants a wife is not particular in appropriating a married woman from another tribe.

On marriage the husband generally pays something to the father, and this has given rise to the idea that the nomads are in the habit of selling their wives for the harems of Constantinople, whereas they are only carrying out their legitimate idea of the marriage contract. The Yourouks are, strictly speaking, endogamists as far as they can manage it, only going outside when necessity obliges them. In this they are a marked contrast to their neighbours the Circassians, who generally seek a wife from a remote settlement. The Circassians also pay something down for a wife: the *kalim* or price is fixed in *baitals* or mares, their ordinary scale of measurement, 1 camel=5 mares, 20 sheep=1 mare, &c. At a betrothal the Yourouks kill a lamb, play the tambourine, let off guns, &c., and exchange handkerchiefs; nothing else. The marriage is a little gayer, dancing and feasting for three or four days, but the ceremony so often repeated seems to lose its zest.

The Turkish Government is anxious to get the Yourouks to settle in some of the more favourable localities on the southern slopes of the Taurus, where a few of the wretched hovels have been erected, but the Yourouks resent the idea, and doggedly refuse to have a mosque or a Hodja. We saw several attempts to thus bind them, but they resent the idea and the mosque falls into ruins. Their religion is a truly pastoral one, and impregnated with much secrecy though amongst them we never saw traces, as with the Takhtagees, of the Ali worship. They are, however, quite distinct from the Mohammedans, for they weep over a corpse, deck it with flowers, and give wine at bridal festivities Sacred trees by the side of the pathways are hung with rags (to

cure fevers) wooden spoons, &c.; and there is a little pile of stones hard by which passers-by add to, and when a Yourouk dies they bring his body to one of these open-air temples, read a little over it from the Koran, and take a few of the small stones to put over his lonely grave. They prefer to bury near a path so that the passer-by may say a prayer, and this has given rise to the erroneous belief that their cemeteries are those of villages which have disappeared. This tree worship amongst them is highly interesting; like the sacred groves of Hellenic and biblical folk-lore, each sacred tree has its spirit and is never cut down for fear of driving away the genius loci, and the transference of evil to trees has its parallel in the East Indian Islands, where epilepsy is transferred to trees by striking the patient with the branches.

Their superstitions are few; they have their Piri, who inhabit streams, and houses and cliffs like all savage races, but they believe in nothing that harms them, and have no special dread of ruins. In the mountains where rain-water has settled they say that if a wild animal—an ibex or a bear—has drunk there, if a man from civilisation drinks after it he will become wild like they are, and this is how they became Yourouks. Where the Yourouk is sedentary and produces crops his tools are of the most primitive nature, the threshing machine of pine wood, set with flint stones at the bottom fixed along the grain of the wood, cf. Isaiah xli, 15: "The new sharp threshing instrument having teeth." On this the man sits and is dragged by bullocks round and round. Their spade is the old Roman bipalium, and their sheep are the fat-tailed ones such as Herodotus described as being "one cubit in width" (Herod. iii, § 113), and such as one sees on the bas-reliefs of Persepolis. Their churns are skins hung on three sticks, and stirred with a dasher. Wooden utensils are the most generally in use, a wooden mortar for pounding coffee, wooden dishes, bowls, &c.; but then each tent has its heirlooms of copper utensils, which are mended with great care and handed down for generations.

The Yourouks are believers in magic and have prophets among them, who look in water, open books, and from the grain of wood can tell who has stolen a goat and where it is. The evil eye, too, they strongly believe in, and the efficacy of an onion hung up in the tent to keep it off. Their games are mostly rough, and consist of wrestling and feats of strength.

Yourouk women often mark their heads with the sign of the cross, having seen Christian women doing so, and believe it brings good luck.

So that each family may know its own cattle they cut the ears of goats, camels, and cows with different marks, and some of them have a very grotesque effect.

It is difficult to obtain from their tradition any idea of the origin of the Yourouk. They will always tell you that they are the descendants of those who inhabited the ruins amongst which they now dwell, and that their kind ancestors put up letters on the walls to inform them concerning treasure they had concealed. I have seen a Yourouk hard at work with a chisel making his way into a column in which he is sure gold is hidden. I have seen them dig holes below Greek inscriptions with the same object in view.

Each tribe has its Agha, or chief, who is held responsible by the government for the good conduct of the tribe. Practically he is their legislator, and settles all disputes, for a Yourouk never thinks of taking his grievances before the Turkish law courts.

The advent of the Yourouks into Asia Minor and their origin is lost in obscurity. Bertrandon de la Broquière tells us how two waves of them spread over Asia Minor in the fifteenth century, the first settling in the towns and blending with the Turks, the second preferring to keep up the nomad habits of their forefathers. The great number of Persian words in the dialect of Turkish that they speak—words never used by other Turks, such as *beruh*, "be off," *shuma* for "you," "pool" for money, &c.—stamps them as originally having used that language and coming from the Persian Mountains. In features and colour they are more akin to the Kourds than the Persians or the Armenians. Their skin is fairer, and their cast of countenance would argue that they are of northern origin, perhaps from the mountainous district east of the Caspian.

DISCUSSION.

Mr. WALHOUSE made some remarks regarding the aversion from the peacock, spoken of by Mr. Bent, as held by the tribes described by him. Mr. Walhouse asked whether the peacock is found in a wild state in the countries north of the Black Sea, as he had supposed the *habitat* of the peacock did not extend west of India. Mr. Bent, in stating that it is found in Persia, also mentioned that the turkey is included in the same condemnation of ill-omen and uncleanness. This is remarkable, as the turkey is an American bird, and can have been known only recently in those countries.

Prof. RUPERT JONES referred to the fact that a threshing-machine, set with flints, such as that described by Mr. Bent, had been brought from Aleppo, and forms part of the Christy Collection in the British Museum, Bloomsbury.

The following paper was then read by the Author :—

On the WILTSHIRE CIRCLES.

By A. L. LEWIS, F.C.A.

(WITH PLATE XI.)

THE series of papers on Rude Stone Monuments which I have from time to time during the last twenty years been permitted to bring before this Institute, and the Societies which have merged in it, would seem to be incomplete without some notice of those largest and best known of all our circles, the remains of which are to be found in Wiltshire. These, however, have been so frequently planned, drawn, and described, that I shall assume that their details are known to all who care enough about the subject to read this paper, and I shall therefore restrict myself to the discussion of certain points which are in dispute, and if, in doing so, I refer very largely to two Reports presented in the years 1882 and 1883 to the Society of Antiquaries by the Rev. W. C. Lukis, it is because those reports not only embody Mr. Lukis' own views, which are always worthy of the highest consideration, but because they appear to have been semi-officially, at least, endorsed by the Society of Antiquaries, and may therefore be taken generally as the best exponents of certain opinions to which I am opposed.

ABURY.

The circles at Abury (or Avebury) take precedence of all others, both on account of their own magnitude and of that of the stones composing them. They were first noticed by Aubrey in 1648–9, at which time they were almost entire, but he, unfortunately, did not make a very accurate plan of them. Dr. Stukeley spent much time in investigating them between seventy and eighty years later, but they had, during that interval, been nearly destroyed; from the information, however, which he obtained, Dr. Stukeley decided that they had consisted of two sets of concentric circles and some other stones, surrounded by another circle (from 1,100 to 1,200 feet in diameter), which again was encircled by a broad and deep ditch, outside which was an embankment large enough for a railway; and that there were also two avenues of stones, each a mile or so long, one leading in a south-easterly direction to a smaller double circle on Overton Hill, and the other leading in a south-westerly direction to a single stone. In this arrangement

Stukeley saw a monstrous figure of a snake, the head of which was the Overton Hill circle, while the convolutions of the body formed the Abury circles, and the stone at the end of the south-western avenue represented the tip of the tail.

Mr. Lukis, in his first report to the Society of Antiquaries ("Proc." IX, 150), takes great exception not only to Stukeley's theories but also to his statements as to facts. Thus he says of the two smaller circles: "Each, according to Stukeley, contained a concentric circle; in the centre of the northern circle there was a 'cove,' whatever that may mean, and in the centre of the southern circle a pillar; not a trace of these concentric circles is now perceptible upon the surface; of their former existence, therefore, there may be some doubt, for neither is Aubrey nor Sir R. C. Hoare responsible for them, nor for the central pillar. The Rector of Yatesbury and I procured a number of men, who carefully probed the ground with iron bars wherever Stukeley had marked fallen stones in his plan, and wherever sarsen chippings might be presumed to remain from broken stones, and with the exception of one buried stone of the supposed northern inner circle, we met with no indication of them." Of the northern inner circle, Sir R. C. Hoare's surveyor, Mr. Crocker, marked one stone as remaining in 1812, and Dean Merewether testifies to the existence of two prostrate stones in 1849, so that we have plenty of independent evidence for one if not two stones of this circle, and if the stone which Mr. Lukis found buried be not one of these stones but another, we have his own evidence for a third stone; nor does Stukeley say of the others in the northern circle that they were buried, but that they were taken up and used for building purposes. Of the southern circle, he says, some are buried under a barn and under houses, and that one is buried under the earth in a little garden, so that Mr. Lukis' failure in finding them is no evidence whatever of inaccuracy on the part of Stukeley, who, moreover, gives the dates of removal and the names of the barbarians who removed most of the stones in question. Aubrey, whose plan Mr. Lukis prefers to Stukeley's, though he does not mark any inner circle in the northern circle, does show stones scattered about inside the southern circle, which may very well have been remains of the southern inner circle, for Mr. Lukis points out with regard to the two stones at Longstone Cove, which still exist and afford an opportunity of comparison, "how unfaithful" (Aubrey's) "drawings are as to the form and position of the stones," while Sir R. C. Hoare expressly states that Aubrey, "in his rough plan, noticed the stones only that were erect, not those reclining or fallen," which is, indeed, clearly shown by a comparison of Aubrey's plan with Stukeley's, and, although Stukeley says the

people told him that the inner northern circle was nearly all standing in 1710, he does not pretend to have seen it in that condition himself, but shows the then existing stones as "fallen," except that one which was still standing in Sir R. C. Hoare's time, and apparently remained in a prostrate condition as lately as 1849. There can fortunately be no doubt about the existence in the centre of the northern circles of the three stones which Stukeley termed the "Adytum, or Cove of the Temple," for Aubrey made a special sketch of them, and two out of the three (B and C) still remain. They were arranged thus:—A | B | C, B facing to the north-east, and certainly seem to me very suitable for the inner sanctuary of such a temple as a circle or two circles of stones would form. A similar "cove" appears to have existed in the centre of the great circle at Arberlowe, in Derbyshire, which, like the Abury circles, is surrounded by a ditch and bank of considerable size. Another "cove" is to be found adjoining the large circles at Stanton Drew, of which, however, Mr. Lukis says: "The so-called 'cove' is probably a ruined cist of which the covering stone has long since disappeared;" but the height of one of the stones of this "cove" (ten feet), its thinness in proportion to its height, and the circumstances generally, make this conjecture of Mr. Lukis, in my opinion, highly improbable. The "Five Knights," near the Rollrich Circle, may also have been a similar "cove," as may "Kit's Coty House," and the "Hoar-stone" at Enstone, regarding both which the "ruined cist" idea has, I believe, been put forward, but without any evidence to support it. Where a "cove" is formed by three stones there may be some reference to that peculiar trinitarian idea which is found in so much ancient symbolism, and it may also be borne in mind that in the Aberdeenshire circles the so-called "altar-stone" is flanked by two other stones, forming a trinity, though not arranged like the "coves." On the whole, therefore, it appears to me highly probable that these "coves" were places of sacrifice, from which, however, the actual altars have been removed.

Mr. Lukis considers the south-western or Beckhampton Avenue to be the creation of Stukeley's own fertile imagination. "What," he says, "is the evidence for Stukeley's tail of the snake, *i.e.*, his Beckhampton Avenue? Aubrey saw no such thing, nor has anyone else," and so on, at great length. Briefly stated, Mr. Lukis' objections are that, as Aubrey has not shown any such avenue, it did not exist, and that, as the small river and a quantity of marshy ground lie in its way, it could not have existed; and he thinks the stones concerning the destruction of which Dr. Stukeley obtained full particulars, were merely stray blocks naturally deposited; the two large stones which still

remain in a field near Beckhampton, and are known as the "Longstone Cove," and which Dr. Stukeley said formed a cove adjoining the avenue, Mr. Lukis thinks are the remains of a large circle entirely distinct from Abury. Of the south-eastern or Kennet Avenue, which Stukeley believed to have run in a curved line from the great circle at Abury to the smaller circles on Overton Hill, Mr. Lukis says:—"I also told you last year that I had little faith in Stukeley's notion that the monument on Overton Hill with its avenue of stones formed a part of the Kennet Avenue, and consequently a part of the Avebury monument. It was the snake theory that gave rise to this notion. I am as sceptical now as I was then, for if there be strong ground for rejecting a Beckhampton Avenue there is good reason for the non-existence of the head and neck of a snake. There was unquestionably a monument on Overton Hill, consisting of two concentric rings of stones and of a short avenue—the evidence in favour of this cannot be disputed, but I hold that it was a monument wholly distinct from that of Avebury." ("Proc. Soc. Antiq.," June, 1883.)

I myself have never adopted Stukeley's snake theory, for, even assuming his plan to be correct, I could see no great resemblance to a serpent, nor could I ever see anything very suggestive of a serpent in the arrangement of our other circles. The two stones called the "Longstone Cove," or "Devils Coits," are also much too far apart to have formed such a cove as that in the centre of the northern circle at Abury, or in the other places which I have mentioned, and I readily accept Mr. Lukis' suggestion that they were part of a circle, both on account of the position of the stones themselves, and because, if it were so, this circle, with the great circle at Abury, and the smaller one on Overton Hill, would have formed a group of three circles comparable with the three circles at Stanton Drew, the three called the "Hurlers," in Cornwall, and the three in Cumberland, of which one only (the "Long Meg" circle) now remains, and we should thus bring this magnificent group of circles into closer connection with the similar though smaller remains in other parts of the country. Having no prepossession in favour of the snake theory, the question whether the Kennet Avenue consisted of two avenues meeting at a right angle, as figured by Aubrey, or one curved avenue, as figured by Stukeley, is one which I can consider with the utmost impartiality, but the direction of the roads leads me to think that Stukeley was right. The roads from Marlborough to Abury and Calne doubtless follow tracks of very great antiquity, and these tracks struck the avenue close by the Overton Hill circle, which was a good landmark; they then followed the avenue until its curve towards

Abury took those who wanted to go westward out of their way, and they then turned off at an angle, leaving those who wanted to go to Abury to follow the avenue which the present road to the village practically does, though its junction with the main road has been diverted by buildings, &c. That the avenue took the curve that the main road now takes between the site of the Overton Hill circle and the beginning of the road to Abury is shown by four prostrate stones under the hedge in the meadow on the south side of the curve. If Aubrey really found an angle in the avenue it must have been an obtuse and not a right angle, for a right angle could not be planned on the site; but as he has placed the river on the wrong side of Silbury Hill, it is evident that he was not so exact in this part of his plan as he was about the bank and vallum of the great circle, where he certainly came nearer the truth than Stukeley did.

Mr. Lukis' objections to the Beckhampton Avenue are that it must have led across the river and over impassable ground, and that Aubrey does not mention it. At Stanton Drew two of the circles have short avenues which go from them towards the river (much larger than the Kennet), which flows close by, and at Mount Murray, in the Isle of Man, there is also a small circle with a curved avenue leading to it across decidedly marshy ground, so that it is in no way improbable that an avenue formerly existed leading from the Abury circle to one bank of the Kennet, and that a similar avenue led from the Longstone Cove circle (if circle it were) to the other bank. If the circles were places of worship or sacrifice, such avenues connecting them with a running stream may have had a special object or meaning. The objection that Aubrey does not mention any remains of a second avenue is a more serious, but not a fatal one. A much more careful observer than Aubrey showed himself to be once denied the existence of a large stone which I was afterwards able to show him *in situ*, and quite as obvious as any of the Beckhampton avenue stones would have been. Stukeley's statements about the stones of the avenue leading from the great circle towards the river are very precise, and it appears from them that some remained *in situ* in his time, though prostrate, while the dates of the destruction of others were perfectly well-known; a great quantity of stone has also been used in this direction in making causeways, &c., which makes it probable that some ancient monumental construction formerly stood on the spot. Mr. Lukis would have us believe that these stones were merely stones lying casually about without any arrangement, but Stukeley says: "Reuben Horsal remembers three standing in the pasture," and again, "Mr. Alexander told me he remembered several

stones standing by the parting of the roads under Beckhampton, demolished by Richard Fowler"; and I need hardly point out that a number of stones could hardly have come into a standing position accidentally, whatever might be the case with prostrate stones. If, as I imagine, the stones Mr. Alexander told Stukeley of were south of the Longstone Cove (or circle), they were probably the remains of a second avenue belonging to it. As in the case of the Kennet avenue the present arrangement of the roads affords much reason for believing in the former existence of the Beckhampton avenue, for there is a straight and good, but desolate road, eight miles long, from Devizes to the Calne road at Beckhampton, and thence to Abury; and although the section from Beckhampton to Abury does not now follow the line of the avenue, there are indications that it formerly did so, and that the road from Devizes led up to the beginning of the avenue. While then we need not adopt Stukeley's snake theory, we are not, in my opinion, justified in rejecting all the information which he picked up during a series of years from those inhabitants who had known the stones and had assisted in their destruction.

Winterbourne Bassett.

There was formerly a circle, about four miles north from Abury, in the parish of Winterbourne Bassett. Stukeley described it as a "double circle, concentric, sixty cubits diameter, the two circles near one another, so that one may walk between . . . . west of it is a single broad, flat, and high stone standing by itself." In Sir R. C. Hoare's time it consisted "only of a few inconsiderable stones." Mr. Lukis says of it: "Not one stone is now standing and only six are visible, and one or two of these are barely above ground. By probing we found eleven buried stones, which we uncovered. Some of them appear to be very near to their original places in the circles, and others have been displaced. Stukeley's 60 cubits diameter (110 feet according to his measure of a cubit) is clearly an error for radius, for the diameter of the outer circle is about 240 feet and that of the inner 165 feet. The stones are small, and the monument can only have been imposing by reason of its large size. A prostrate stone occupies the centre of the circles, and in this respect we are reminded of two Cornish circles, which have a like feature. It is possible, but scarcely probable, that this stone belonged to the inner circle left here in course of removal, and yet, if it was in the centre when Stukeley visited the monument, it is strange that he should have been silent respecting it, with his keen eye for

keblas and coves. The menhir west of the circle and the barrow northward have disappeared, but in the same field with the circles, and at a distance of 253 feet from the centre of them, in a direction S.S.E., is a large stone lying upon the ground, nine feet long, seven feet wide, and at a distance of 351 E.N.E. feet from the centre, are two fallen stones much buried. These three stones are not alluded to by Stukeley and Hoare." I have visited the site of this circle, but have nothing to add to Mr. Lukis' description, and am glad to have his authority for an outlying stone to the east north-east of it, the significance of which will be referred to further on.

Stonehenge.

I now propose to consider a few points connected with Stonehenge, and, to save needless repetition, I shall assume that its general arrangement is fully known to my readers.

Respecting the so-called "altar-stone," I would suggest, firstly, that though probably not an altar itself, it may have served as a base for an altar; and, secondly, that the little bluestone impost, the use of which no one has yet found out, may possibly have stood on two small stones on this base, and formed or represented an altar. Aubrey was told by the Earl of Pembroke that an altar-stone was found in the middle of the area and carried away, but Mr. Petrie points out that there is "no such stone in Inigo Jones' plan, nor is there any hole or sharp sinking of the earth in the middle of the area such as would be left by abstracting a large stone sunken in the ground."

Another great question is as to the relative age of the respective circles at Stonehenge. My own idea of the natural sequence of things is that, if there were any difference in their age, the bluestone circles were the first on the ground, with the "Friar's Heel" as an outlying stone to the north-east, and that the sarsen stones, so unique in their manner of arrangement and fixing, were later, and were perhaps added in post-Roman times, and possibly, as stated by old chroniclers, to commemorate the massacre of the Britons by the Saxons. Mr. Petrie considers that the position of the centres of the various circles tends to show the sarsen circles to be the oldest, but the outer bluestones, if there first, must have been moved to enable the inner trilithons to be erected, and must have been put back as best they could be, so that an irregularity in their centring is not surprising. If such additions to and re-arrangements of an older monument were made in post-Roman times, it is also possible that the "Friar's Heel" might have been moved

at the same time to the point where the midsummer sun rose then, so that too much reliance must not be placed upon any evidence as to the original date of the monument founded upon the present position of the "Friar's Heel" with regard to the rising midsummer sun.

Mr. Lukis considers the "Friar's Heel" to be merely "a sepulchral monolith erected upon consecrated ground, perhaps long after the purpose for which the circles were designed had been discontinued," his only assigned reason being that the "Friar's Heel" is not shaped with a tool, and that all the stones of the circle are so shaped; and with regard to the prostrate stone which lies between the "Friar's Heel" and the circles, he says, "the late Mr. Cunnington, who was Sir R. C. Hoare's archæological coadjutor, proved, as he wrote in 1803, that this stone stood erect on the spot, by finding the excavation which it originally occupied, and accordingly his son, Mr. W. Cunnington, F.G.S., has remarked that, if this be the case, it must have entirely concealed the 'Friar's Heel' from persons standing in front of the western trilithon, or exact centre of the building, and that it would have been impossible to see the sun rise over the supposed 'gnomon' at the summer solstice; this fact, which can scarcely be disputed, serves to dispose of the 'grand orrery' theory." Now, as I have never on the one hand supported Dr. Stukeley's serpent theory regarding Abury, so, on the other hand, I have never believed in what may properly be called the "grand orrery" theory respecting Stonehenge, but have always thought that no one would be more astonished at the various astronomical coincidences found in it than the people themselves who arranged the placing of the stones. I do, however, most strongly maintain what may be called the "rising sun" theory. Mr. Petrie does not think that the stone now prostrate at the edge of the ditch did stand upright, but if it did, it would simply take the function now assigned to the "Friar's Heel," and the north-easterly reference would remain as before. Mr. Lukis also thinks that the "Friar's Heel" is much more recent than the other stones, because it is not worked, but most people would regard this as an evidence of greater age; it may indeed have been left unworked on account of greater veneration due to its position and function. If, however, these two stones had never existed the whole monument would still appear to be especially designed with reference to the north-east; but that one or both of these stones formed part of the original design is rendered almost certain by the fact that the Roll-rich, a rough circle of the same diameter as the outer circle at Stonehenge, has its outlying stone (the "King-stone") at very nearly the same distance and direction as

Stonehenge has in the "Friar's Heel," while, in other circles, there is a similar reference to the north-east, either by outlying stones or adjoining circles, or prominent hill-tops. To give full particulars upon these points would be to repeat the substance of a number of papers already published in our Journal, but in a paper on circles in Cumberland, printed in the Journal in May, 1886, I stated that out of twenty-one circles visited in South Britain eighteen had a special reference to the north-east, the next most distinguished quarter being the south-east (in nine cases only). I may now say nineteen circles out of the twenty-one have the north-easterly reference as Warne in his "Ancient Dorset" (p. 117) says of the "Nine Stones" at Winterbourne Abbas: "A tenth stone which the eye detects just peeping through the long grass on the north-east side." I did not see this stone, as the circle is enclosed in a plantation, which I was not permitted to enter, so I tabulated that circle as having no reference towards any direction, but I can now, on Warne's authority, put it on the same footing as the others. The circle at Winterbourne Bassett may also be added to the list on the authority of Mr. Lukis.

What these arrangements can point to except sun worship in some form or other no one has yet been able to suggest, but I must observe that the variation in the direction in which the outlying stones, &c., stand in regard to the circles is very considerable, so that the arrangement was probably rather conventional in many cases.

Mr. Lukis, however, raises—not for the first time—another objection to the use of circles as temples. Speaking of the Stanton Drew circles, he says: "Circles situated as these are in close proximity are difficult of explanation, and the difficulty is the greater when their dimensions are so unequal." "It is possible that some may have been places for religious gatherings of the people, but as we are at present wholly ignorant of the people who erected them, and of their religious beliefs, we are not likely to make much progress in this direction for some time to come." "Clusters of circles without avenues are found elsewhere, *e.g.*, those at the foot of Sittaford Tor on Dartmoor, and at Tregaseal and the Hurlers in Cornwall; of the use of these groups it is not easy to form an opinion. If they were temples why should the worshippers have been gathered into separate congregations? It seems to me that this grouping must be fatal to the temple theory." Against this objection we have not only the analogy of different temples in close proximity for different seasons, or gods, or purposes in pagan religions, and the existence of numerous chapels grouped together under one roof in Christian cathedrals and churches, but the fact stated

by Colonel Forbes Leslie ("Early Races of Scotland," p. 214), that "several stone circles close together, even intersecting each other, and lately erected to the same object of worship, viz., to Vital, may any day be seen in secluded rocky places near towns and villages of the Dekhan in India. Near Poonah they are extremely common." I venture to submit that this is a case in which the old saying, "an ounce of practice is worth a ton of theory," holds good if it can possibly hold good anywhere.

In conclusion, I will simply say that while burials were undoubtedly made in some circles they did not take place in all. None have as yet been found, I believe, within the great circle at Abury, though plenty have been found round about it. This shows that interment was at the most a secondary object; the primary object I believe to have been that of worship or sacrifice.

Explanation of Plate XI.

Fig. 1. Sketch Plan of Stonehenge.

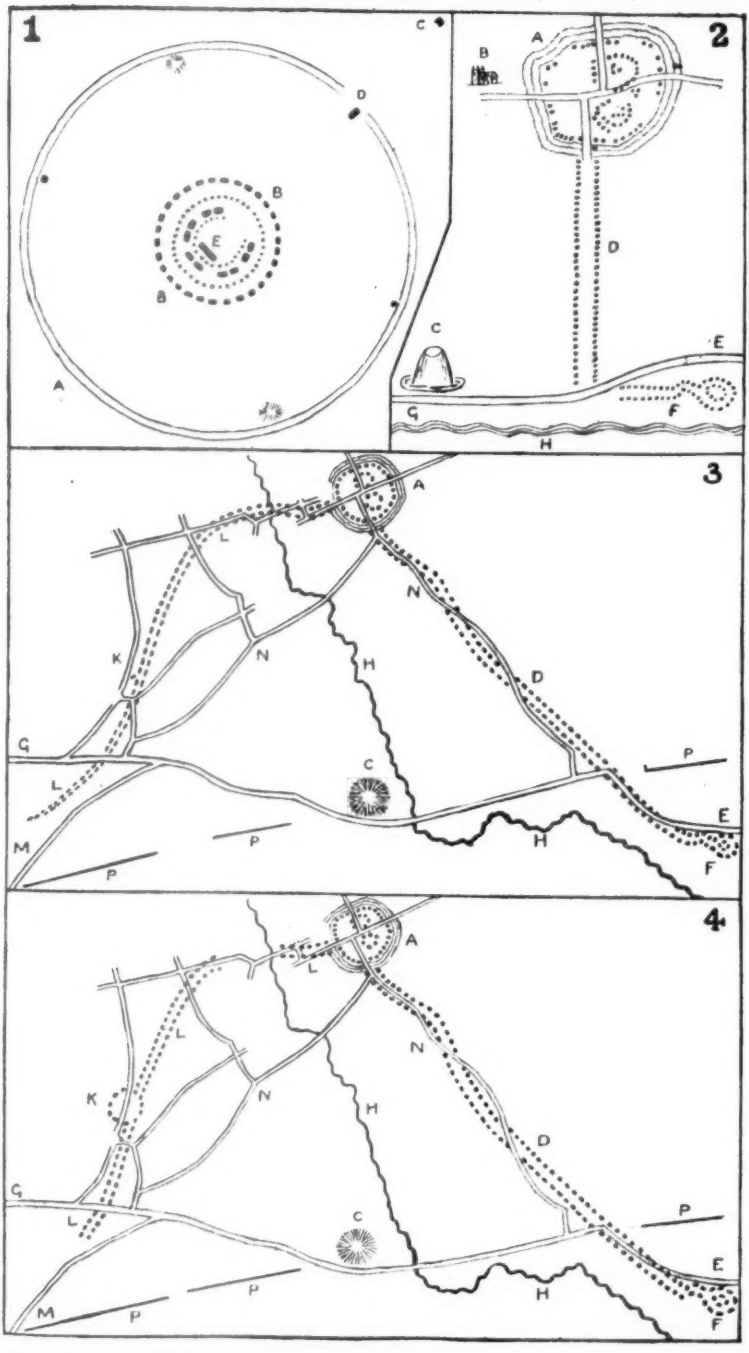
- A. Trench round circles (diameter 300 feet).
- B. Circles (represented here as completely restored, though it is doubtful whether they were ever actually completed).
- C. "Friar's Heel."
- D. Flat stone on edge of trench.
- E. Stone called the "Altar Stone."

Fig. 2. Plan of Abury, according to Aubrey (about 1663).

Fig. 3. Plan of Abury, according to Stukeley (about 1722).

Fig. 4. Plan of Abury, restoration suggested by the author.

- A. Great Circle with inner circles, bank, and trench.
- B. Church.
- C. Silbury Hill.
- D. Kennet Avenue (several stones still remaining).
- E. Road to Marlborough.
- F. Overton Hill Circle and Avenue (entirely destroyed).
- G. Road to Calne.
- H. River Kennet.
- K. "Longstone Cove" (two stones remaining).
- L. Beckhampton Avenue (entirely destroyed).
- M. Road to Devizes.
- N N. Roads to Abury.
- P P P. Roman Road (as shown in Sir R. C. Hoare's plan.)



PLANS OF STONEHENGE AND ABURY.

Mrau

The top edge of numbers 1, 3, and 4 is true north, but the top edge of number 2 is about magnetic north.

Numbers 3 and 4 each represent about two square miles of country, and the stones are consequently much magnified in size and diminished in number. The smallness of the scale has also compelled the omission of the cove and inner circle within the northern circle, and the single stone and inner circle within the southern circle, inside the large circle at Abury; but in these points the author's restoration would follow Stukeley, the only difference being with regard to the Beckhampton Avenue and Longstone Cove.

The diameter of the outer circle of stones at Stonehenge is 100 feet, of that at Abury, 1,100 to 1,200 feet.

Discussion.

Prof. T. Rupert Jones expressed his pleasure at Mr. Lewis's paper showing a strong reaction in favour of Stukeley's veracity as to the actual position and state of the stones of Avebury, as described by that much-discredited old author from his own observation and carefully collected information. The speaker further remarked that he long ago formed an opinion that Stonehenge, as a temple dedicated to the sun, passed through gradations of change and partial reconstruction, such as are now known as "church-restoration," to meet modifications of the cult and successive fashions of architectural arrangement, as far as the means at hand allowed.

Mr. R. B. Holt called attention to *Hermes Britannicus*, by the late Rev. W. L. Bowles, Canon Residentiary of Sarum. That author thought that Stonehenge and Abury were the national temples of two distinct races, the first being dedicated to the Sun, the second to the Moon. He would be glad to know if the author of the paper agreed with Canon Bowles.

Mr. T. V. Holmes remarked that there was one important peculiarity in the position of Avebury. The two most important of the Cumberland stone circles, that at Keswick and Long Meg and her Daughters in the Eden Valley district, stood like Stonehenge, not on the highest ground in their neighbourhood, yet on open upland plateaux. Avebury, on the other hand, lies low in the valley of the River Kennet, surrounded by higher ground on all sides, while the huge mound of Silbury occupies a similar position less than a mile lower down the valley. This seems clearly to point to a difference of purpose on the part of the constructors of Avebury. If Stonehenge and the Cumberland circles mentioned were connected (for example) with sun-worship, then Avebury probably became a sacred place in connection with river-worship, either on account of the occasional outflow of a bourne close by, or for some other reason.

The CHAIRMAN and Miss BUCKLAND also joined in the discussion.

Mr. LEWIS, in reply to Mr. Holt and Mr. Holmes, said that, inasmuch as the Abury circles were surrounded by a high embankment, a stone outside them would have been useless in connection with the sunrise, but the opening of the "cove" in the centre of the northern inner circle faced towards the north-east, so that the central stone of the three which formed this "cove," or as it might be called "holy of holies," and which happily still existed, faced the rising midsummer sun and received its earliest rays. At the Arberlowe circle, where a bank like that at Abury exists, the remains of a "cove" also exist in the centre of the circle. The northern circle of Abury therefore, appeared to have been devoted to sun-worship, but other parts of it might also have been devoted to river-worship (the Beckhampton avenue, for instance) and to moon-worship, just as in large cathedrals many altars were found dedicated to as many different saints; but as he did not know what characteristic to look for as suggesting moon-worship, he could not identify it. The southern inner circle might, however, very probably have been devoted to the moon. He was much gratified by the general concurrence in his views expressed by Professor Rupert Jones and the other speakers. Mr. Petrie considered the point of observation at Stonehenge to have been behind and through the great trilithon, and not in the centre of the circle.

ANTHROPOLOGICAL MISCELLANEA.

Comparative Portraits of an Individual at Different Ages.

As photography is probably destined to play a larger part in Anthropology than it has hitherto done, the following extract from a recent article in a photographic journal may be of interest:—

"Mr. F. Galton's idea of the comparison of photographs of the same person taken at different periods, from infancy upwards, is slightly indicated by an article with illustrations in the new *Strand Magazine* entitled, 'Portraits of Celebrities at different times of their lives.' The examples given are, however, only interesting from the point of view of that unscientific person, the 'general reader.' For instance, the comparison of a photograph of Lord Tennyson at fifty-two with a painting of the poet at the age of twenty-two tells us very little, nor can much be said about three portraits of Professor Blackie, one at the age of five from a painting, another at forty-five from a lithograph, and a third at eighty from a photograph. The series of Mr. Spurgeon's portraits is more complete, as the four examples given—at the age of twenty-one, thirty, thirty-six, and fifty-four—are all from photographs. Miss Terry's and Mr. Irving's portraits are also from photographs, and Mr. Irving's are noticeable because one of his photographs, taken when he was thirty years old, is not the least like him, save as to the hair, which appears to have taken about this time the peculiar wave with which we are all familiar. The concentrated look in the eyes and brows of Sir John Lubbock is repeated in each of the portraits given, and the extraordinary transformation which baldness and a beard have effected in Mr. Algernon Swinburne, who once had luxuriant locks and only a chin tuft, will surprise many.

"Experiments in portraiture of this kind, even when conducted on a scientific basis, must be always more or less incomplete and disappointing. When a dozen portraits taken in as many minutes show a face in a different aspect in each, not much dependence can be placed on the trustworthiness of a series taken at intervals of a year or more. Perhaps more accurate knowledge of the changes wrought by time would be obtained by photographing the features separately. A series of photographs of the mouth, for instance, extending over half a century, would be extremely curious."—*The Photographic News*, December 26th, 1890.

Ethnographic Researches in India.

The following letter, dated 12th November, 1890, has been addressed by Mr. H. H. Risley, of the Bengal Civil Service, to the Secretary to the Government of Bengal, Financial Department:—

"1. With reference to the Resolution of the Government of Bengal, dated the 1st May, 1885, sanctioning certain arrangements for the prosecution of ethnographic researches in the territories subject to the Lieutenant Governor of Bengal, I have the honour to submit for the consideration of His Honour the Lieutenant Governor the outlines of a scheme for continuing similar researches in the Lower Provinces, and for extending them to other parts of India.

"2. It will be remembered that in 1885, and the two following years, a series of questions, based for the most part upon the heads of inquiry drawn up in 1874 by a Committee of the Anthropological Institute of Great Britain and Ireland, and framed so as to adapt to Indian conditions the methods of research sanctioned by European men of science, were circulated with the authority of the Government, and that answers were collected by a voluntary agency working under my supervision in every district of Bengal. Of the data procured by this method of inquiry, portions have been published in the *Contemporary* and the *Asiatic Quarterly Reviews*, the *Journal of the Anthropological Institute*, and the *Zeitschrift für Ethnologie*, and in the form of Papers read before the British Association, the Anthropological Institute of Great Britian and Ireland, and the Anthropological Society of Berlin. A proof copy of two out of the four volumes in which the results have been compiled for the Government of Bengal, has also been laid before the Board of Biology and the Board of Oriental Studies in the University of Cambridge, both of which bodies take considerable interest in the study of Indian ethnography.

"3. Although the inquiry extended only to the Lower Provinces of Bengal, and the record of the results, however complete for ordinary administrative purposes, must be regarded as incomplete from the scientific point of view, still enough has been done to demonstrate the remarkable facilities which India offers for collecting ethnographic data on a large scale, and, what is even more important, for testing these data by repetition and comparison. The reason for this is clear. In India a highly organised administrative body, of the most modern type, carries on the work of Government in constant and close contact with people whose beliefs and observances present examples of all stages and varieties of primitive culture, and who, nevertheless, show no signs either of dying out themselves or of parting with their most characteristic usages and superstitions. This state of

things offers peculiarly favourable opportunities for the formation of a trustworthy record of primitive custom and tradition.

"4. It is unnecessary for me to lay stress upon the high value which the customary law, the social observances, the folk lore and traditions, the superstitions, ritual, and religion of the people of India possess for all students of the early history of institutions. The field is comparatively untried, but the results obtained in Bengal seem to show that it is one of remarkable richness and variety. The data already collected, imperfect as they are, throw considerable light upon the early history of marriage and the family, the various forms of the custom of exogamy, the comparative prevalence and distribution of male and female kinship, the phenomena of totemism, and the development of different stages of religious belief. It is believed that they will also tend to facilitate and cheapen the operations of the Indian census and to enhance its accuracy, that they embody valuable information concerning infant marriage and the prohibition of widow marriage, and that, by extending our knowledge of the customs and habits of the people, they will indirectly raise the general standard of administration in India.

"5. This being so, it seems to me desirable to continue in Bengal, and to initiate in other Provinces of the Indian Empire the methods of investigation which have yielded such valuable results. I believe that this may be done without incurring large expenditure, and without putting an undue strain on the regular administrative staff.

"6. The Bengal inquiries have shown that in all grades of the administration officers, both European and Native, are to be found, who take a genuine interest in the investigation of social phenomena, and who would be prepared to assist actively in collecting ethnographic data in addition to their regular official duties. All that is needed is that the work should be set on foot under the general countenance and authority of the Government, that it should be organized on a regular system, that the current expenses of postage and stationery should be met, that some clerical assistance should be given, and that the results should be published from time to time in a form somewhat resembling that already adopted in Bengal.

"7. The following are the main features of the scheme which seems to me best calculated to carry out the objects in view:—

"(*a.*) That unpaid Provincial Directors of Ethnographic inquiries should be appointed by the Government in each of the large Provinces of India. It is believed that several of the higher officials will be ready to undertake this work in addition to their ordinary duties.

"(*b.*) That each Provincial Director should be provided by the Government with a clerk to carry on correspondence, and should be given an allowance for postage, stationery, etc.

"(*c.*) That a series of Ethnographic questions should be drawn up, printed, and circulated by the authority of Government. I think it probable that the set of questions framed by Mr. J. G. Frazer, of Trinity College, Cambridge, would answer this purpose if modified to suit Indian conditions, and amplified with reference to the questions used in Bengal. Mr. Frazer has been good enough to offer to assist in carrying out the necessary alterations.

"(*d.*) That the Provincial Directors, working through the District Officers, and the heads of departments, and in such other ways as they may find suitable, should enlist a number of correspondents in each Province, should supply them with copies of the questions and such further instructions as may be necessary, and should arrange with them the subjects to be taken up for inquiry, much in the same way as was done in Bengal.

"(*e.*) That the Provincial Director, or correspondents selected by him, should from time to time draw up monographs on the Ethnography of different castes, tribes, or social groups, or on different branches of custom and folk lore.

"(*f.*) That these monographs should be printed by the Government in such form as may be found convenient, and distributed to learned Societies in Europe and elsewhere in the same manner as the publications of the United States Bureau of Ethnology are now circulated.

"8. I submit that this plan offers a reasonable prospect of collecting at comparatively small cost a mass of information of great scientific value, which would at the same time be of use to the Government of India in dealing with the large class of administrative and legislative questions which directly or indirectly affect the social and religious life of the people. I would ask, with reference to the Resolution already cited, and connected correspondence, that the Lieutenant Governor may be moved to take the subject into consideration, and to submit this letter with a favourable recommendation to the Government of India."

Ethnographic Album of the Pacific Islands.

The following note by Mr. J. Edge Partington accompanied the presentation of an Ethnographical Album by himself and Mr. Charles Heape:—

In presenting to the Library of the Anthropological Institute a copy of "The Ethnographical Album of the Pacific Islands," it has been thought desirable that I should give some account of how my colleague Mr. Chas. Heape and myself first thought of bringing out such a work. It owes its inception to the fact that we are both collectors on a more or less scientific basis. He has made (and is

still making) a collection in this country, while I have had the advantage of largely collecting from the natives themselves while on a trip through the South Pacific Islands in the years 1879–80. It is to be regretted, however, that before visiting the Islands I had not taken a special interest in this subject, as I should then have been able to collect to much better purpose, especially with regard to obtaining more accurate information on the spot.

After two years' work in the preparation of the "Album" I can see that unless a collector has such previous knowledge he is very apt to be led astray as to the localities of his various possessions. This of course fifty years ago was difficult enough, but it has become still more so since the introduction of the foreign labour trade. "Foreign goods" now find their way in large quantities both to Queensland and Fiji, and are again distributed.

Many travellers have not the advantage of being able to compare the weapons, &c., of different districts; it is therefore very often the case that they are unable to settle the localities of their various possessions until they reach home. Unfortunately many do not then take this trouble, and the things are variously labelled as coming from the places where they were obtained, and they thus pass from hand to hand and often into local museums.

Although there are many books of travel which give descriptions of the country, statistics, &c., yet there are few that deal with the natives, and still fewer with their belongings; and thus a collector has very little chance when he becomes possessed of a new "piece" of being able to ascertain whence it comes, unless he be lucky enough to be within reach of the British Museum, for in my experience that is the *only* public museum from which anything like accurate information, on this particular subject, can be obtained. I have got heartily sick of the generic terms under which museums not interested in the Ethnography of the Pacific Islands hide either their ignorance or their indifference.

I think I have said enough to show the necessity of some work on this subject which will enable collectors to obtain information. If we have in any way succeeded I am sure that both Mr. Heape and myself are well repaid, for from the first the preparing of this work has been a labour of love; the price which we have put upon it being arranged to just cover the actual money out of pocket.

We have now been working upon it for over two years, and as each sheet was put upon the stone as drawn, and the requisite number of impressions immediately struck off, any mistake made could not afterwards be rectified or further information obtained added: we have therefore embodied such corrections and additions on a sheet to be cut up and gummed on the various plates to which they refer.

It is our intention to still continue making drawings of any further specimens that may turn up and notes of fresh information, and to issue such at a later date; this, combined with the impossibility of binding such a work to suit all, has been our reason for issuing it in its present form.

We have to thank Mr. Cuthbert Peek for his hint as to handwriting not being always clear enough to be certain of correctly conveying the right spelling of out-of-the-way names of places; we have therefore followed his advice and have had an index of places printed.

In connection with the production of this work our thanks are especially due to Mr. A. W. Franks and Mr. C. H. Read for their aid and encouragement.

OBITUARY NOTICES.

Sir R. F. Burton, K.C.M.G.

Our Vice-President, Sir Richard Francis Burton, K.C.M.G., was born 19th March, 1821, and died at his Consulate at Trieste on 20th October, 1890. He was the eldest of the three children of Colonel Joseph N. Burton. He entered Trinity College, Oxford, in 1840, but soon got tired of University life. An appointment was obtained for him from the East India Company to the 14th regiment Bombay Native Infantry, and he joined his regiment at Gujerat in 1842. His proficiency in Hindustani led to his being appointed regimental interpreter, and his residence with his regiment in Scinde gave rise to the publication, in 1851, of his first important work, "Scinde, or the Unhappy Valley." In 1846–47 he took a six months' trip to Goa and the Blue Mountains, an account of which he also published in 1851. In addition to the work upon official reports incidental to his regimental duties, he applied himself to linguistic studies, and mastered the Persian, Gujerati, and Marathi languages. He returned to England in 1849. On 3rd April, 1853, he undertook his hazardous but successful pilgrimage to El Medinah and Meccah, the account of which, in three volumes, he published in 1855. On his return, he was selected for an even more perilous undertaking, that of proceeding to the Somali country. In November, 1854, he set out from Zeila, disguised as an Arab merchant, and reached Harrar in safety on 4th January, 1855, remaining there till the 13th. He was the first Englishman who had ever entered that famous city. He returned to Aden with a view of arranging for an expedition to the Upper Nile *viâ* Harrar, and landed at Berbera on 7th April at the head of a party of 42 men.

The expedition never left Berbera. On the night of the 29th April it was attacked by a crowd of Somalis, Burton and his companion, Speke, were severely wounded, and the expedition returned to Aden. In the following year he published his "First Footsteps in East Africa," and also addressed a letter to the Secretary of the Royal Geographical Society, strongly urging the importance of Berbera and the Somali coast for British interests in the Red Sea. This letter procured for him from the Government of India the appropriate reward of a severe snubbing.

He next offered himself for service in the Crimean war, and joined Beatson's Horse at the Dardanelles. He volunteered to relieve Kars, but his offer was not accepted, and he returned to

England determined to devote himself for the future to exploration.

He then undertook, with the assistance of the Government and the Royal Geographical Society, his great African expedition. Having obtained two years' leave of absence from the East India Company, he reached Zanzibar in December, 1856, accompanied by Lieut. Speke. After infinite labour and suffering, the expedition resulted in the discovery, by Burton, of Lake Tanganyika, and by Speke of Lake Victoria Nyanza. It terminated in March, 1859, and is recorded in the 29th volume of the "Journal of the Royal Geographical Society," and in Burton's work on "The Lake Region of Equatorial Africa."

In 1861 he published an account of a visit to Utah under the title of "The City of the Saints," and in the same year occurred his marriage to the lady whose admirable devotion to him we have had many opportunities of witnessing, and his appointment as Consul at Fernando Po. In the same year he explored the Cameroons mountains.

So far, we are indebted for the facts of his life to the excellent memoir in the December number of the "Proceedings of the Royal Geographical Society," but from this point our own Proceedings take it up, for he joined the Ethnological Society in 1861, when Hunt was its Honorary Secretary, and almost every principal event of his life since then has been recorded by some communication to our transactions. Burton had then just obtained a commission from the English Government to visit Dahome, and induce the ruler of that savage country to modify some of his customs. Before his departure, Hunt induced him to address to the Society some notes on Du Chaillu's explorations and adventures in Equatorial Africa, in which he said that Du Chaillu had well and veraciously studied the then new and curious race of which he had treated, and that every page produced upon his mind the effect of the bugle upon the cast charger after a year or two in the cabshafts of civilization.

From the 10th to the 17th April, 1862, he visited the source of the Gaboon, and spent a day among the Fans, which he described in a paper before the Ethnological Society, and in an article in the "Anthropological Review."

On the establishment of the Anthropological Society on 6th January, 1863, he took the Chair at the inaugural meeting, and was elected a Vice-President.

From 18th May to 17th June, 1863, he visited Kana, a ruined town in Dahome, and further prosecuted his mission to that country between 8th December, 1863, and 26th February, 1864, a stay long enough to learn something of the Ffon language. He gave an account of his visits to the Ethnological Society on 22nd November, 1864. The gallant old race of Dahome, he said, "had been killed out; it was pleasing to remark the gradual but sure advance of El Islam, the perfect cure for the disorders which ruled the land." On his return, he wrote a letter to the Wesleyan Mis-

sionary Committee, acknowledging the kindness of Mr. Bernasco, their Missionary. In the same year he visited the cataracts of the Congo river. He also edited General Marcy's "Prairie Traveller."

On 23rd October, 1863, he sent to the Anthropological Society a present of two skulls from Annabom, in the West African seas.

In 1864 he contributed to the "Anthropological Review" notes on scalping and on Waitz's anthropology, and published the account in two volumes of his mission to Dahome.

On his return to England he became a frequent attendant at the meetings of the Anthropological Society. On 1st November he read a paper on certain matters connected with the Dahomans, which appears in Vol. i of its "Memoirs." It was in the discussion on this paper that he first referred to the Society as the "refuge for destitute truth."

In 1865 he was appointed Consul at Santos, Brazil, and before his departure, a farewell dinner was given to him by members of the society, Lord Stanley (now Earl of Derby) in the chair, supported by Mr. (now Lord) Arthur Russell, the late Lord Houghton, Lord Milton, and others. From Santos he sent to the Society a paper on a hermaphrodite from the Cape de Verde Islands ("Memoirs," Vol. ii), and on a kitchen midden at Santos (11th December, 1865).

At the annual meeting of the Society in 1867, Dr. Hunt, its first President, took the newly created office of Director, and Captain Burton, though absent, was elected President in his place. Dr. Hunt, however, returned to that office the following year.

In 1869, Burton published, in two volumes, his "Explorations of the Highlands of the Brazil," to which Mrs. Burton wrote a characteristic and touching preface.

After the union of the Ethnological and Anthropological Societies, he contributed to the Institute in November and December, 1871, having then become Consul at Damascus, an account of the collections made by him in the Holy Land. He then said, "the two Societies always should have been one." In March, 1872, he read a paper on the Hamath stones, now famous as the Hittite inscriptions, and the Council published his transcripts of them.

In the summer of 1872, he went to Iceland and forwarded thence for exhibition a collection of human remains and other articles, which were described by Mr. Carter Blake. He obtained promotion to the Consulate at Trieste, and thence sent a translation of the work of M. Gerber on the primordial inhabitants of Minas Geraes, the great central province of Brazil.

At the beginning of 1873, some of our members seceded and formed the London Anthropological Society. Among them was Captain Burton, who became one of its Vice-Presidents. In a letter to our then Director, he gave as his reason "the deadly shade of respectability, the trail of the slow-worm, is over them all." That Society existed for three years, at the end of which the breach was happily healed, and the Institute has remained a united body ever since. Meanwhile, Captain Burton's contributions to the science

were made to the new Society and appeared in its Journal, "Anthropologia." They comprised an account of the kitchen middens of Saõ Paulo, Brazil, and notes on the Castellieri or prehistoric ruins of the Istrian peninsula.

In 1875 he again became a contributor to our Journal, to which he sent papers on the Long Wall of Salona, and the ruined cities of Pharia and Gelsa di Lesina, in the neighbourhood of Trieste. In 1877 he sent us a collection of 50 flint flakes from Egypt, and a further paper on the Castellieri of Istria; in 1878 a paper on stones and bones from Egypt and Midian. In 1882 he was again among us, and read a paper at a special meeting held at the house of General Pitt Rivers on stone implements from the Gold Coast of West Africa. His last communication to us was made through Dr. Tylor, on 27th March, 1888, describing the two Akka boys brought to Europe by Miani.

The enumeration of his contributions to science through our own and other institutes, and of his amazing labour as an explorer does not exhaust the record of the services to mankind of the versatile and accomplished friend and colleague whose loss we have to lament. His translation of the Lusiads of Camoens, and his thorough if too daring version of the "Thousand and One Nights" will give him a permanent place in literature. His friend Winwood Reade, wrote of him, "He is in the truest sense of the word a cosmopolitan. He is versed in the cardinal languages of Europe, skilled in all the accomplishments of a soldier and a sportsman, a good classical scholar, a profound orientalist, and has considerable knowledge of the natural sciences. With all this, he is a thorough man of the world."

This witness is true. He was too original and too independent to be a popular man in official circles, and their neglect of him is not surprising.

The tardy reward of a Knight Commandership of St. Michael and St. George was hardly worthy of his distinguished services to his country, but he had already written his name so high in the annals of its great explorers that no handle was needed to distinguish it. The memory his colleagues in this Institute have of their association with him is that of a man whose personal qualities were as loveable as his genius was admirable.

E. W. Brabrook.

Mr. George Harris, LL.D., F.S.A.

George Harris, Hon. LL.D. (Grenville), and F.S.A., was for several years a Vice-President of the Institute. He caused to be printed, for private circulation, under the genial editorship of his friend, Dr. B. W. Richardson, F.R.S., in the year 1888, an interesting autobiography, from which we are able to glean the principal events in his life. He was born 6th May, 1809, the son of a solicitor in good practice at Rugby, and received his early education at the famous school there. Being in delicate health, and suffering from the ill-usage then common in public schools, he left Rugby in 1823, and was strangely enough entered as a midshipman in the Navy. It is hardly necessary to say that it was soon found that he was not suited for the hardships of naval life, and after some unpleasant experience at a private school in Devon, he was articled to his father, and finally admitted into the firm as a partner. An ambition for literary success and a desire for London life possessed him, and in June, 1838, he gave up his prospects at Rugby and came to London. He shortly afterwards entered himself as a student at Trinity Hall, Cambridge. In 1839 he was appointed editor of the *Hull Times*, and became a member of the Middle Temple. An article in his paper which offended a powerful interest led to the close of his journalistic career, and he thereupon resolved earnestly to prepare for the bar. He was called in 1843, and devoted himself to law and literature for some years, bringing out his "Life of Lord Chancellor Hardwicke," a work which gained him considerable reputation, and procured him the honour of an interview with the Prince Consort, in 1847. Not finding the road to fortune in either of those pursuits, he thought of marriage. The chapter in his autobiography which tells how he turned this matter over in his mind is charmingly quaint and naive, but the result in his wooing and winning Miss Elizabeth Innes was, as far as he was concerned, to place him beyond anxiety about money matters for the rest of his life, and to assure him happiness which seems never to have been interrupted, and as far as his friends were concerned to enable him to introduce them to a most graceful and kindly hostess. In 1861 he published "Civilization considered as a Science." In 1862 he was appointed by Lord Chancellor Westbury to be Registrar of the Court of Bankruptcy in Manchester. It was while acting in this capacity that he became a Fellow of the Anthropological Society of London, and President of the Manchester Anthropological Society, of which he delivered the inaugural address on 1st November, 1866. He was elected on our Council in 1868, early in which year he retired from the public

service, and was awarded the liberal pension of £666 13*s.* 4*d.* per annum. He had bought and enlarged the ancient manor house of Iselipps, standing in beautiful grounds in the village of Northolt, Middlesex, and there he spent the rest of his days. It was a yearly gratification to him, as long as his health permitted it, to invite his anthropological and antiquarian friends to pass a summer day with him. In 1869 he read a paper before the Anthropological Society on the distinctions, mental and moral, occasioned by the difference of sex. In 1871 he was elected a Vice-President, and was among those selected to retain that position on the formation of this Institute. In 1872 and 1873 he read papers before us on "The Hereditary Transmission of Endowments and Qualities of Different Kinds"; "On the Comparative Longevity of Animals of Different Species and of Man, and the Probable Causes which mainly conduce to promote this Difference"; "On Moral Irresponsibility resulting from Insanity"; "On the Concurrent Contemporaneous Progress of Renovation and Waste in Animated Frames, and the extent to which such Operations are Controllable by Artificial Means"; and "On Theories Regarding Intellect and Instinct, with an Attempt to deduce a Satisfactory Conclusion therefrom." He joined the London Anthropological Society in November, 1873, and read a paper to them on "Tests Adapted to Determine the Truth of Supernatural Phenomena." In 1875 and 1876 he was again elected a Vice-President of the Institute. In the latter year he completed an undertaking which had been in his mind, as he tells us, from his very boyhood, that of writing "A Philosophical Treatise on the Nature and Constitution of Man." (2 vols.). The work was reviewed in our journal, and it is interesting to the writer of this memoir, who was also the writer of that review, to find that his friend (who did not know that fact), calls it in his diary "very fair and temperate." It is clear we did not allow friendship to betray us into undue enthusiasm. It will be seen that the bent of Dr. Harris's mind was towards psychological subjects, and, thinking we did not give adequate attention to that branch of anthropology, he joined the late Sergeant Cox in the formation of the Psychological Society. Since then we have seen little of him in these rooms. The weight of years has made his visits to London less and less frequent, though he continued to write in *Modern Thought* and other periodicals for some years longer. It will be seen from what we have said that he possessed a remarkably versatile mind, much varied ability, and great literary talent. Dr. Richardson justly speaks in high praise of his qualities of untiring industry, good humour, and constructive skill. We shall always remember him in this Institute as a colleague and fellow-worker who earned our respect by his accomplishments, our esteem by his high character, and our gratitude by his friendship, which no differences of opinion were ever allowed to interrupt.

E. W. Brabrook.

Dr. H. Muirhead.

In Dr. Henry Muirhead, of Bushyhill, Cambuslang, near Glasgow, his friends must regret an amiable, warmhearted, and intellectual man, and this Institute a valuable supporter. He was born in 1814 in one of the suburbs of Glasgow, and was not gifted by fortune in the outset of his life, being one of those offspring of whom Scotland is so justly proud, whose ambition, energy, perseverance, self-denial, and intellectual power, enable them to triumph over the greatest external disadvantages. After prolonged effort, he was able to afford himself a full University course, and took the degree of M.D. at Glasgow in 1844. He subsequently turned his attention to the department of mental disease, was superintendent, and afterwards proprietor, of a lunatic asylum, and retired with a competent fortune to Cambuslang in 1867. There he devoted himself to the study of science, especially of metaphysics and meteorology, and, by liberal contributions of money as well as by personal effort, to the fostering of scientific progress in Glasgow. He was LL.D. of Glasgow University, *honoris causâ*, President of the Philosophical Society of Glasgow, Governor of Anderson's College there, and of the West of Scotland Technical College; he was a founder of the Public Library and Working Men's Social Union at Cambuslang, and also founded, at a cost of £2,500, the demonstratorship of physiology in Glasgow University which is called by his name. There are doubtless members of the Institute present who will remember how, at the York meeting of the British Association, after Professor Flower, from the chair of Anthropology, had made an eloquent appeal on behalf of our Institute, showing how it was crippled in its publications and other work by the lack of means, Dr. Muirhead, then sitting on the platform, quietly handed over a cheque for 100 guineas to the Chairman, with the characteristic stipulation that his name should not be mentioned.

Dr. Muirhead closed his useful and blameless life on July 31st, at Cambuslang, at the ripe age of 76.

J. Beddoe.

Miss North.

Miss Marianne North, born 1830, died 1890, was the eldest daughter of Frederick North, Esq., of Rougham Hall, Norfolk, for many years M.P. for Hastings, and representative of a family eminent in English history. She was well known to the public through the unique and beautiful Museum presented by her to the Royal Gardens at Kew. She built it at her own cost, and covered its walls with her exact and gorgeous paintings of flowers of all parts of the world. The passion Miss North felt for flowers and for painting them, and her great love of travel, suggested the pursuit she followed during twenty years, with strenuous exertion. Her aim was to paint true portraits, so to speak, of all the more important flowers in the midst of their native surroundings, especially of those that are rapidly disappearing before the advance of colonization and agriculture.

In at least eight different journeys she travelled through the border lands of civilisation in North and South America, India, Australasia, and the Cape, besides visiting numerous islands in search of their characteristic flowers. She succeeded admirably in her arduous and self-imposed task, and permanently secured the results in the Museum above referred to. Latterly, her overtaxed strength gave way, and she died in the home she had made for herself at Alderley, in Gloucestershire, where she turned a small garden into a marvel of botanical interest as well as of floral beauty.

It has often happened that botanists have succeeded in establishing the friendliest relations with the inhabitants of the country they visit, for their pursuit is one that attracts the sympathy and goodwill of all classes from the highest to the lowest. Miss North was a conspicuous instance of this success. She made warm friendships and gained esteem wherever she went, so that numerous persons at home and abroad turned to her with a common sense of loyal admiration. Society has been deprived, by her death, of a lady of a warmly sympathetic nature, of rare intellectual gifts and accomplishments, and of a noble and womanly character.

Francis Galton.